

BLM LIBRARY



88029253



U.S. Department of the Interior
Bureau of Land Management

April 1993

Coos Bay District Office
1300 Airport Way
North Bend, Oregon 97459

Oregon Department of Fish and Wildlife
Southwest Region,
Roseburg, Oregon

Dean Creek Elk Viewing Area - Activity Management Plan



© JIM THOMAS

QL
201
.D426
1993

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM/OR/WA/PL-93/16/1792

28132005

ID 88029253

QC
201
.D426
1993

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

DEAN CREEK ELK VIEWING AREA ACTIVITY MANAGEMENT PLAN



United States Department of the Interior
Bureau of Land Management
Coos Bay District, Oregon



Oregon Department of Fish and Wildlife
Southwest Region, Roseburg, Oregon



April 1993

RECEIVED
FEB 10 1963
U.S. DEPT. OF AGRICULTURE
WASHINGTON, D.C. 20250

DEAN CHURCH B. H. C. 1963



VISION STATEMENT

The Dean Creek Elk Viewing Area (EVA) will be managed to support high quality wildlife viewing, environmental education and nature appreciation. The main purpose will be to provide safe viewing opportunities while maintaining and protecting the elk and other key wildlife species that inhabit and make the Dean Creek EVA the valuable wildlife appreciation resource it now is. Improved local economic health and stability is a secondary purpose.

As in the past, the habitats at the Dean Creek EVA will continue to be managed to provide a setting that is attractive to both wildlife and the viewing public. Through their experiences, visitors will gain a greater understanding and appreciation for elk, waterfowl and other wildlife and their habitats, as well as for relationships between people and the environment. The experiences produced at the Dean Creek EVA will ultimately result in building support for wildlife habitat management and conservation.

PLAN APPROVED BY:

Melvin Chase

Melvin Chase
Coos Bay District Manager
Bureau of Land Management

3-15-93

Date

Terry Richards

Terry Richards
Umpqua Area Manager
Bureau of Land Management

3/15/93

Date

Derald Walker

Derald Walker
Southwest Regional Supervisor
Oregon Department of Fish and Wildlife

3/15/93

Date

ACKNOWLEDGEMENTS

This document was developed under the team effort of the following people:

Kermit Baty
Wildlife Biologist, Umpqua Resource Area
Coos Bay District, Bureau of Land Management

Rich Ray
Interpretive Specialist
Oregon State Office, Bureau of Land Management

Chuck Telford
Landscape Architect
Oregon State Office, Bureau of Land Management

John Toman
District Wildlife Biologist
South Coast District, Oregon Department of Fish and Wildlife

Dennis Turowski
District Recreation Planner
Coos Bay District, Bureau of Land Management

Kathy Jo Wall
Natural Resource Specialist, Dean Creek EVA
Coos Bay District, Bureau of Land Management

Author credit is as follows:

Chapters 1 & 2 - Kathy Jo Wall
Chapter 3 & Appendix C - Rich Ray
Chapter 4 - All Team Members

Chapter compilation was done by Kathy Jo Wall.

Editorial assistance was provided by Kathleen Helm, Technical Publications Writer-Editor, Coos Bay District, Bureau of Land Management.

Conceptual drawings of the East-End Ranch were done by Chuck Telford; all other maps were designed by Kate Hamilton, Cartographic Technician, Coos Bay District, Bureau of Land Management.

Typesetting and layout was done by Annette Langenstein, Visual Information Specialist, Coos Bay District, Bureau of Land Management.

For more information, contact:

Bureau of Land Management
Coos Bay District
1300 Airport Lane
North Bend, Oregon 97459-2000
(503) 756-0100

Oregon Department of Fish and Wildlife
4475 Boat Basin Drive
Charleston, Oregon 97420
(503) 888-5515

SUMMARY OF ACTIONS BY ISSUE

The Dean Creek EVA Activity Management Plan was based upon the premise that the key to a successful management plan is issue resolution. Program development was influenced by the six issues that were identified, with actions being formulated for each issue. The actions, listed below according to issue, are prescriptions that will be implemented to meet the goals and objectives for management of the area. Detailed descriptions of the actions, and tables for their implementation and costs, are provided in Chapter 4.

Issue 1 - Highway Safety

- Action 1.1 - Construct a parking lot on the east end of the area with an access road to the ranch (coordinate with ODOT) (Map 5).
- Action 1.2 - Prepare a visual screening plan, with the Hinsdale Slough curve as the first priority (coordinate with ODOT) (Map 6).
- Action 1.3 - Manage pastures to encourage elk use in areas that provide safe viewing. (See Issue 4, Actions 4.1, 4.2, 4.3 and 4.4).
- Action 1.4 - Design a highway signing plan (coordinate with ODOT).
- Action 1.5 - Replace or repair all right-of-way fences that are no longer structurally sound, with fence that will deter elk and other wildlife from crossing onto the highway.

Issue 2 - Management of Different Habitats

- Action 2.1 - Manage pastures for high quality elk forage. (See Issue 4, Actions 4.1, 4.2, 4.3 and 4.4).
- Action 2.2 - Maintain wetland habitats for waterfowl, shorebirds and other watchable wildlife species through the use of water-control structures.
- Action 2.3 - Provide increased nesting opportunities for avian species in a manner that will maintain the area's natural appearance.
- Action 2.4 - Provide maximum security from human disturbance during the breeding and nesting season of waterfowl.
- Action 2.5 - Enhance riparian areas for the benefit of wildlife.
- Action 2.6 - Provide upland meadow habitat for elk forage (Map 2).
- Action 2.7 - Retain hardwood component for forest diversity.
- Action 2.8 - Maintain existing number of snags for snag-dependent species.
- Action 2.9 - Manage beaver populations in pastures that emphasize elk forage.

Issue 3 - Elk Herd Size

- Action 3.1 - Remove excess animals by trapping and transplanting yearly.
- Action 3.2 - Allow natural course with a sick or injured animal.

Issue 4 - Pasture Management

- Action 4.1 - Conduct annual pasture management including forage conditioning, hay removal and fertilization.
- Action 4.2 - Renovate pastures.
- Action 4.3 - Use prescribed burning as a tool to improve the condition of the pastures.
- Action 4.4 - Maintain drainage ditches by dredging to their original depth, as needed, in areas that emphasize elk forage.

Issue 5 - Public Use and Facilities

Zone 1 - Wetland Viewing Area

- Action 5.1 - Design and construct viewing decks extending from the parking lot (Figure 1).
- Action 5.2 - Design and distribute a brochure for the Wetland Viewing Area.
- Action 5.3 - Design and present live presentations and/or guided walks to small groups.
- Action 5.4 - Design and install interpretive and interactive displays on the viewing decks.
- Action 5.5 - Install viewing scopes on viewing decks.

Zone 3 - Hinsdale Interpretive Center

- Action 5.6 - Design and install two additional interpretive panels.
- Action 5.7 - Design and install interactive displays.
- Action 5.8 - Design and distribute an interpretive brochure on the Dean Creek EVA to be updated every two years.
- Action 5.9 - Design and present live presentations at scheduled times at the Center.
- Action 5.10 - Design and install an orientation panel.
- Action 5.11 - Develop an audio interpretation program for the Dean Creek EVA.
- Action 5.12 - Install short-range radio system.
- Action 5.13 - Design and construct two viewing decks on the southern side of the parking area.
- Action 5.14 - Install viewing scopes at the Viewing Area and along the Frontage Road.
- Action 5.15 - Design and construct a water system for the west end, including the installation of drinking fountains.

Zone 6 - East Viewing Area

Action 5.16 - Conduct guided walks to the Hinsdale Slough.

Zone 7 - East-End Ranch (Schedule A)

Action 5.17 - Prepare an evaluation survey and cost estimate for all buildings.

Action 5.18 - Renovate house to meet codes for public use (structure, accessibility, electrical, fire safety, water quality and sewer system).

Action 5.19 - Design and construct Visitor Contact Area, bookstore, and manager's office in the house (pending evaluation survey and cost estimates).

Action 5.20 - Install restroom facilities and drinking water for public use outside the house, near the parking area.

Action 5.21 - Design and install interpretive outdoor displays.

Action 5.22 - Design and install interpretive displays for the Visitor Contact Area.

Action 5.23 - Establish volunteer group for staffing bookstore.

Action 5.24 - Conduct survey to assess need for overnight-use facility.

Action 5.25 - Furnish house for overnight group use (pending evaluation survey, cost estimates and survey responses).

Action 5.26 - Design and present short, live presentations.

Action 5.27 - Design and distribute, for sale, an interpretive video on the Dean Creek EVA.

Action 5.28 - Design and install audio broadcast loop for hearing-impaired and sight-impaired.

Action 5.29 - Demolish the equipment shed, house trailer, milking parlor and old barn (Table 4).

Zone 7 -East End Ranch (Schedule B)

Action 5.30 - Design and construct an environmental education center.

All Zones - Educational Use and Facility Needs

Action 5.31 - Develop curriculum.

Action 5.32 - Develop pre-site packets for students.

Action 5.33 - Develop an onsite educational program.

Action 5.34 - Prepare post-site packets.

Issue 6 - Area Administration, Use Supervision, Monitoring and Research

- Action 6.1 - Create an administrative office at the East-End Ranch.
- Action 6.2 - Establish a caretaker role and onsite living arrangements at the ranch on a year-round basis.
- Action 6.3 - Establish a complete team of employees to fully manage Dean Creek EVA.
- Action 6.4 - Organize a volunteer program for assistance in site management and interpretation.
- Action 6.5 - Establish wildlife population/habitat monitoring programs.
- Action 6.6 - Establish visitor use monitoring programs.
- Action 6.7 - Support research activities, within physical and economic constraints, whenever possible.
- Action 6.8 - Establish a cooperative agreement with the Dean Creek Wildlife Incorporated.
- Action 6.9 - Pursue cooperative agreements with environmental education sources to develop an environmental education program.
- Action 6.10 - Pursue land acquisition of some adjacent properties to enhance Dean Creek EVA, but only if there are willing sellers.
- Action 6.11 - Enforce public use restrictions.
- Action 6.12 - Pursue an Administrative Withdrawal of the Dean Creek EVA.

TABLE OF CONTENTS

	<u>Page</u>
Vision Statement	i
Acknowledgements	ii
Summary of the Actions by Issue	iii
 Chapter 1 - Introduction and Background	
A. Purpose	1
B. Partners	1
C. Summary of Public Participation	1
D. Location	2
E. Historical Overview	2
F. Present Resource Management	8
 Chapter 2 - Existing Resources and Development	
A. Physical Resources	11
Soils	11
Hydrology	11
Climate	11
Geology	11
B. Flora and Fauna	12
Flora	12
Wildlife	13
Elk Biology	13
Elk Habitat	15
Daily Activities of Elk	17
Disease and Parasites	18
C. Existing Facilities	18
D. Literature Cited in Chapter 2	20
 Chapter 3 - Visitor Use and Demand	
A. Importance of Dean Creek EVA	23
B. Visitor Use Zones	23
Introduction	23
Zone 1 - Wetland Viewing Area	23
Zone 2 - Forest Jeep Trail	24
Zone 3 - Hinsdale Interpretive Center	24
Zone 4 - Elk Viewing Pasture	24
Zone 5 - Tussock Pasture	24
Zone 6 - East Viewing Area	24
Zone 7 - East End Ranch	26
Zone 8 - Upland Trail	26

C. Current Visitor Use	26
D. Projected Visitor Profile	29
E. Visitor Needs	29
Recreational Visitors	30
Recreational Residents	30
F. Literature Cited in Chapter 3	32

Chapter 4 - Management Program

A. Management Strategies: Issues, Goals, Objectives and Actions	33
Issue 1 - Highway Safety	33
Issue 2 - Management of Different Habitats	37
Issue 3 - Elk Herd Size	39
Issue 4 - Pasture Management	40
Issue 5 - Public Use and Facilities	42
Zone 1 - Wetland Viewing Area	44
Zone 3 - Hinsdale Interpretive Center	49
Zone 6 - East Viewing Area	50
Zone 7 - East-End Ranch	50
All Zones - Educational Use and Facility Needs	56
Issue 6 - Area Administration, Use Supervision, Monitoring and Research	57
B. Implementation and Cost Schedules for Planning Issues	63

Appendices

A - List of Planning Participants	A-1
B - Statement of Agreement Between the Bureau of Land Management and Oregon Department of Fish and Wildlife	B-1
C - Interpretive Plan and Media Description for Dean Creek Elk Viewing Area	C-1
D - Summary of Existing Interpretive Services Between Newport and Bandon, Oregon	D-1
E - Other Elk Viewing Areas in the Pacific Northwest	E-1

Tables

1 - Current User Groups at Dean Creek Elk Viewing Area	27
2 - Most Common Activities for Oregon Visitors	28
3 - Appropriate Uses of Media, Activity Programs and Facilities by Zone for Schedule A	45
4 - East-End Ranch Buildings and Their Corresponding Uses During Schedule A	54
5 - Implementation and Cost Schedule for Issue 1 Actions - Highway Safety	64
6 - Implementation and Cost Schedule for Issue 2 Actions - Management of Different Habitats	65
7 - Implementation and Cost Schedule for Issue 3 Actions - Elk Herd Size	66
8 - Implementation and Cost Schedule for Issue 4 Actions - Pasture Management	66
9 - Implementation and Cost Schedule for Issue 5 Actions - Public Use and Facilities	67

10 -	Implementation and Cost Schedule for Issue 6 Actions - Area Administration, Use Supervision, Monitoring and Research	70
11 -	Summary of Implementation and Cost Schedule for All Issues	71

Maps

1 -	Location of the Dean Creek Elk Viewing Area	3
2 -	Structures, Roads and Hydrography	4
3 -	Habitat Areas at Dean Creek Elk Viewing Area	5
4 -	Visitor Use Zones	25
5 -	East Viewing Area	34
6 -	Vegetative Screening Proposed for Highway 38	36
7 -	The Ranch	51

Figures

1 -	Additional Interpretive Facilities	48
2 -	Floor Plan of Ranch House	53



***This Activity Management Plan was analyzed in
EA OR125-93-02, available at the Bureau of Land
Management, Coos Bay District Office.***



CHAPTER 1

INTRODUCTION AND BACKGROUND

A. Purpose

This document describes an activity management plan for the Dean Creek Elk Viewing Area (EVA) as a cooperative effort between the Bureau of Land Management (BLM) and the Oregon Department of Fish and Wildlife (ODFW). The plan, guided by a 50-year vision, updates existing planning efforts at Dean Creek EVA and establishes a framework for its management over the next five years.

The plan's primary objective is to identify issues related to the area's wildlife, resources and visitor use and to propose actions for their resolution. Actions are outlined in an implementation schedule for the development and operation of interpretive facilities, and for the maintenance and improvement of wildlife habitat upon which those facilities are based.

The Dean Creek Elk Viewing Area is jointly managed by the BLM and ODFW. In addition, Dean Creek Wildlife Incorporated, a local community group, has been an active participant in the area's planning and will continue to be active in its development and management.

B. Partners

Partnerships have been vital to the success of the Dean Creek EVA. Some of the major agencies and groups that have contributed are:

Dean Creek Wildlife Incorporated
Ducks Unlimited
Oregon Department of Transportation
Oregon Wildlife Heritage Foundation
Rocky Mountain Elk Foundation
U.S. Fish and Wildlife Service

Many other organizations and individuals which have contributed to the success of the Dean Creek EVA will be identified on a donor recognition plaque to be located in the Hinsdale Interpretive Center.

C. Summary of Public Participation

Many participants and cooperators assisted in the development of this plan (Appendix A). The planning team worked closely with Dean Creek Wildlife Incorporated, holding several meetings with this group to discuss the plan's direction and progress. A public meeting was held at Reedsport, Oregon on August 18, 1992 to ensure opportunity for public input on planning issues, goals, and objectives, and to present preliminary planning concepts.

D. Location

Dean Creek EVA is located near the Oregon coast in Douglas County, along State Highway 38, three miles east of Reedsport (Map 1).

The Dean Creek EVA is a mosaic of pastures, wet meadows, and uplands that are dissected by several ditches and two major sloughs. The EVA encompasses 1,040 acres, comprised of 440 acres of bottomland and 600 acres of uplands (Map 2). The bottomlands contain 120 acres of intensively-managed pastures located near the Hinsdale Interpretive Center, and 80 acres of pasture at the east end that are forage-emphasis areas (Map 3). The west end of the Dean Creek EVA has 70 acres of wet meadow habitat that is frequented by waterfowl and other avian species. The remaining 170 acres of bottomland are classified as marginal pasture or wet meadow habitat. The bottomlands are within the Umpqua River floodplain and are subject to occasional flooding in the winter.

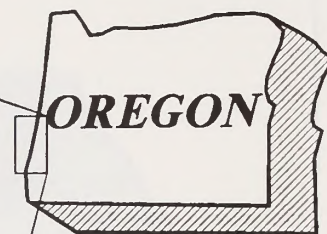
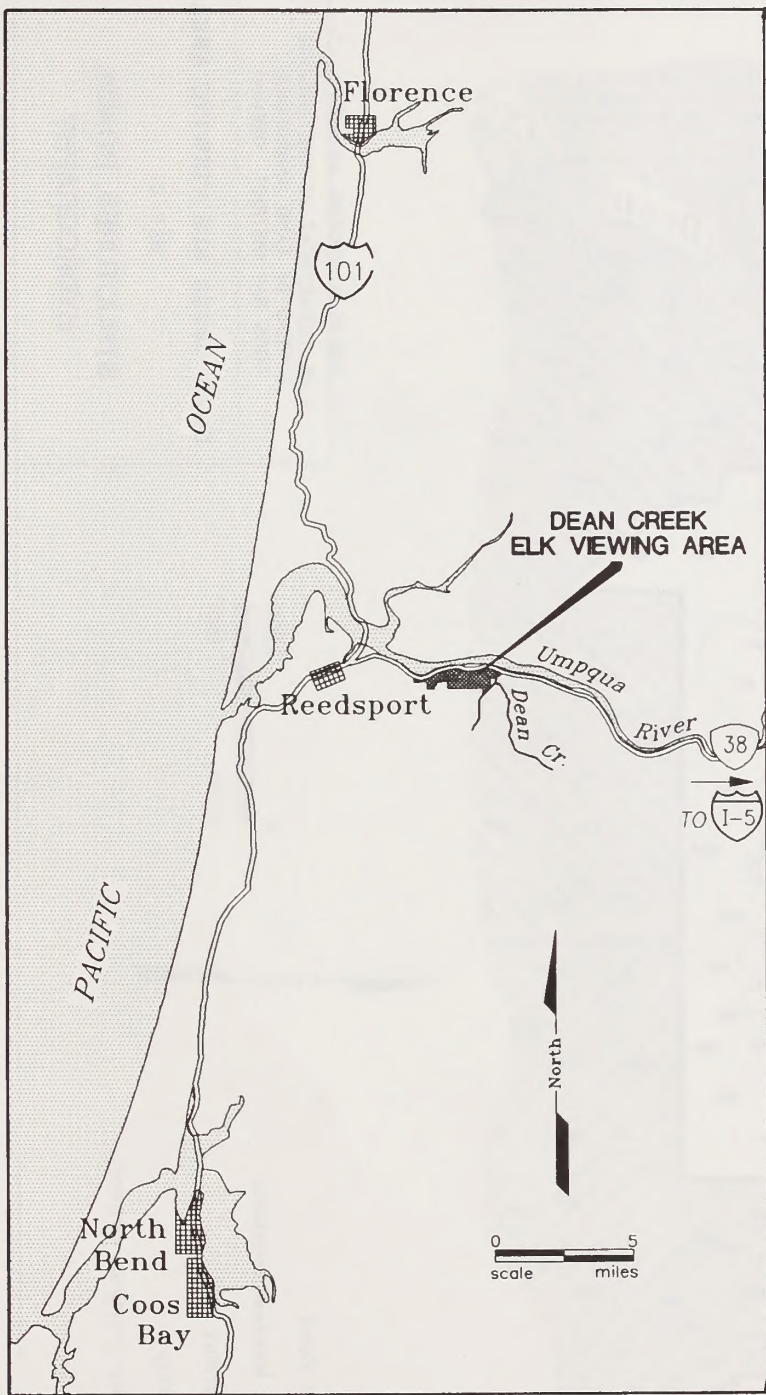
E. Historical Overview

Prior to the 1930s, the area was a tidally-influenced salt water marsh. In 1933, Oregon Highway 38 was constructed which separated the Dean Creek EVA from the Umpqua River by a continuous dike. With the highway construction, six tide gates were installed to allow fresh water from the uplands to flow out to the Umpqua River. Separation of the bottomlands from the influence of the Umpqua River changed the area from a salt water marsh to a fresh water system.

Until 1986, the area was in private ownership. In the 1960s, Don Bower leased the property from the Hinsdale family. Mr. Bower began managing the area for cattle production by clearing the bottomland, improving drainage, reseeding pastures to more nutritional grasses and legumes, and grazing cattle. Elk began to feed in the pastures, and over the years a resident herd formed because of continued pasture management. In 1976, the land was purchased by Phil Washburn, who continued cattle production on the area.

Much of the credit for bringing the Dean Creek EVA into federal ownership belongs to the local public and ODFW. As early as 1971, ODFW began efforts to have the area designated as an elk refuge. In 1977, ODFW secured a hunting closure on the privately-owned areas of Dean Creek. In 1982, ODFW contacted the BLM with a proposal to acquire the Dean Creek property. A bond authorization proposed by the Port of Umpqua to acquire the property for airport development was voted down by the citizens of Reedsport in 1985, convincing the BLM of the public's commitment which cleared the way for acquisition.

Local citizens from the Reedsport area formed a steering committee to channel support and contributions for the proposed Dean Creek EVA. The committee successfully led a "Join The Herd" campaign to encourage letters of



DCLOC.DWG ACAD Rel. 11 kph 9/3/92

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

DEAN CREEK ELK VIEWING AREA

MAP 1

LOCATION MAP

HINSDALE
INTERPRETIVE
CENTER

SPRUCE REACH
ISLAND

RIVER

UMPQUA

EAST END
RANCH

Dean
Cr.

LEGEND

- Fence
- Restrooms
- ⊕ Power Pole
- == Dirt Road
- Unimproved Dirt Road
- ☀ Possible Upland Meadow Location
- ▨ Moore Mill Ownership
- ▩ Menasha Ownership
- ▧ Private Ownership (various owners)
- ▲ Upland Forest

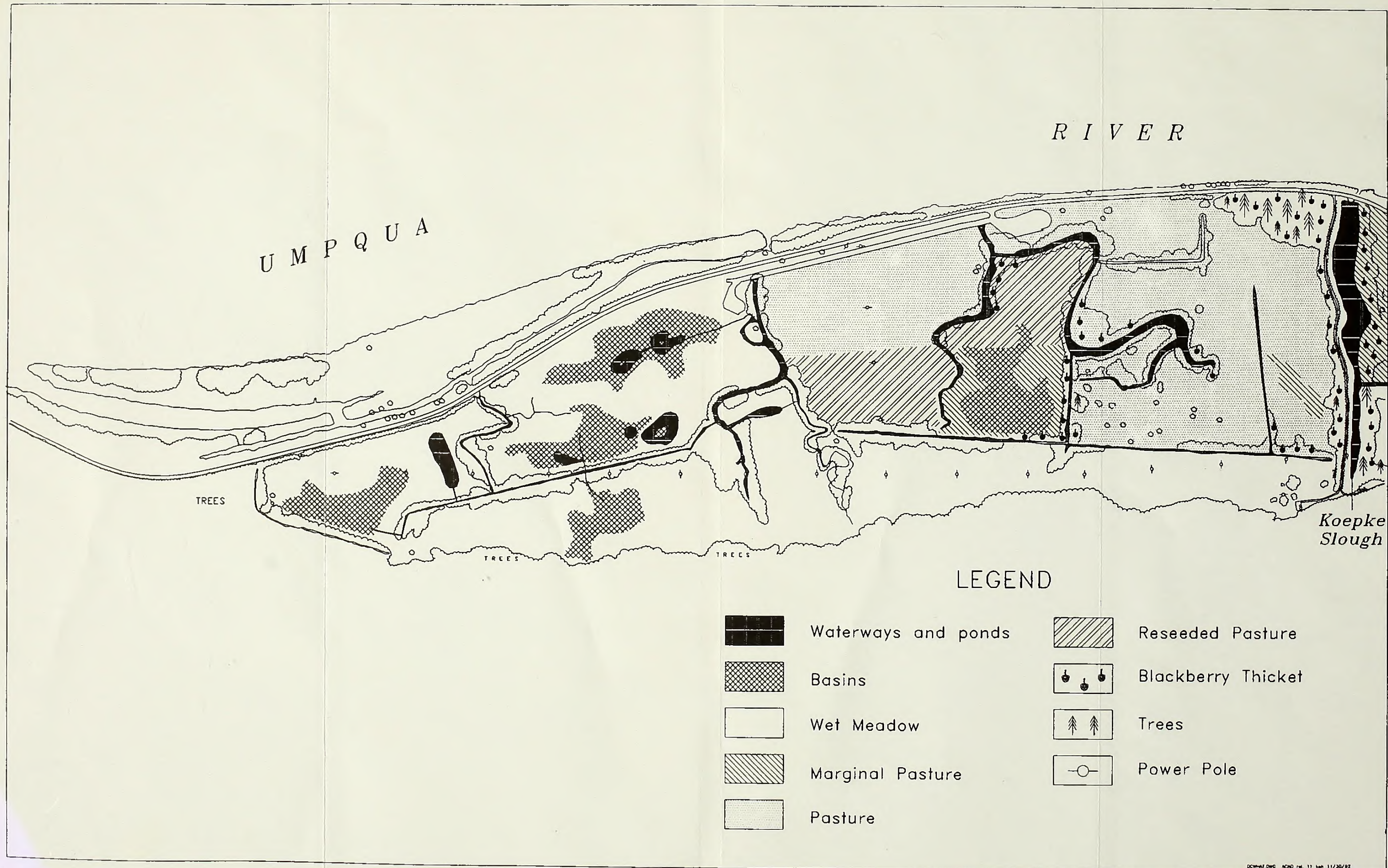


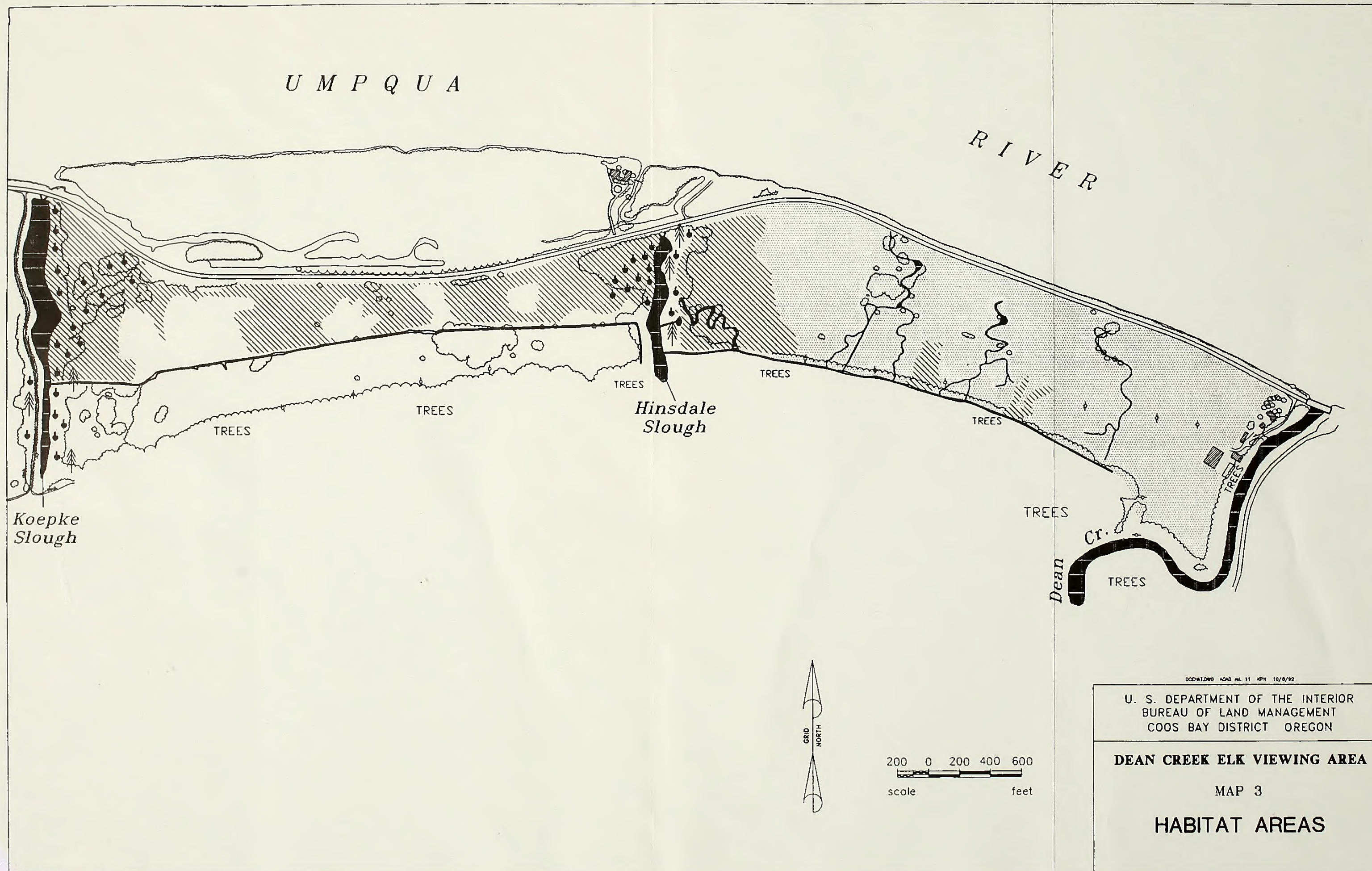
ACAD. Rel. 11 DCACT2.DWG kph 11/23/92
U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

DEAN CREEK ELK VIEWING AREA

MAP 2

STRUCTURES, ROADS,
HYDROGRAPHY





DCD-WILD-000 ACAD. vol. 11 NPM 10/8/92

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

DEAN CREEK ELK VIEWING AREA

MAP 3

HABITAT AREAS

1890



support for federal acquisition of the property and to collect contributions for development of the Hinsdale Interpretive Center. The group initially operated under the umbrella of the Oregon Wildlife Heritage Foundation, but later achieved non-profit status as Dean Creek Wildlife Incorporated. The group has regular meetings and provides input for current management practices and proposed projects at the Dean Creek EVA.

It was in January of 1987 that the BLM acquired the Dean Creek property through a land exchange. The BLM exchanged 77 acres of public domain timberland for 923 acres owned by Mr. Washburn. After the acquisition, a "Statement of Agreement" between the BLM and ODFW was developed for joint management of the area (Appendix B).

A Dean Creek Elk Viewing Area Habitat Management Plan was completed in 1986. General management objectives outlined in the plan were to: 1) manage the area for production of Roosevelt elk as priority species for public viewing and educational opportunity, 2) provide visitor and highway safety, and 3) manage the upland portion for timber production.

At the time of the acquisition the main management concern was highway safety. Because the highway was built on a dike, there were limited areas in which a vehicle could pull completely off the highway. The Oregon State Highway Commission authorized the State Department of Transportation to fund and construct turning lanes from Highway 38 into the elk viewing parking lot. In addition, three pull-off lanes were constructed along the highway in 1988 for viewing safety.

Construction of the viewing area was possible only through much cooperation, contribution and support of several agencies, private enterprise and local citizens. Dean Creek Wildlife Incorporated raised \$85,000 in cash and in-kind contributions for construction of the O.H. Hinsdale Interpretive Center. In 1988, special Congressional appropriations were allocated for initial construction and development of the O. H. Hinsdale Interpretive Center parking area, the frontage road and west parking area. The highway turning lanes and the O.H Hinsdale Interpretive parking area were completed in December of 1989. Congress appropriated additional funds in 1991 for the frontage road and west parking area which were completed in 1992. Permanent sanitary facilities are currently being installed.

Habitat improvement funding for Dean Creek EVA was included in the ODFW biennial budget. The BLM, ODFW and Rocky Mountain Elk Foundation entered into a cost-share project for construction of an elk trap in 1990.

F. Present Resource Management

In June of 1991, the BLM acquired the 116-acre Alderwood Farm located on the east end of Dean Creek EVA. Forty acres of public domain timberland were exchanged for the property. This acquisition was particularly important because historic elk use of the private property created difficulties in managing the herd and minimizing their impacts on the private holdings. Acquisition of Alderwood Farm created a continuous block of public land throughout the home range of the Dean Creek herd which enhanced herd management.

The main reason for managing the Dean Creek EVA is the elk and the viewing opportunity they provide. The BLM and ODFW are actively managing the area to provide high quality elk habitat.

Annual management includes pasture conditioning through forage removal, fertilizing and prescribed burning. Each year, approximately 200 acres of pasture are mowed and fertilized. Cattle are also currently used to accomplish forage removal; however, this practice presents a conflict between visitor expectations and actual experiences. The BLM is researching different techniques, including mechanical mowing, to condition the pastures. A combination of cattle grazing and mowing was used to accomplish pasture management objectives from 1989 through 1992. With the purchase of a tractor and rotary mower in 1992, small sections of the pastures can be mowed as the soil becomes dry enough to support the equipment.

Broadcast burning is done on sections of the pastures every five to ten years, depending on pasture condition and weather constraints. Burning stimulates the growth of pasture species and increases both the nutrient recycling and palatability of the species.

The Dean Creek elk herd is managed to maintain a herd size of 60 to 120 animals, depending on the season of year. Herd size is normally largest in the summer after the cows and their calves join the main herd. Herd size may also be large in the winter as elk from other areas move into the bottomlands. Elk may move into the area because the pastures are higher in forage quality and have increased sunlight compared to the uplands. Excess animals are removed by ODFW by trapping and transplanting, and this technique has worked extremely well. At the Dean Creek EVA, the limiting factors to elk herd size do not include forage production, but rather forage quality, disease, and parasite loads on the pasture.

A challenge cost-share project between the BLM and Ducks Unlimited was completed in 1992. The project enhanced 70 acres of existing wet meadow on the EVA's west end for both nesting and migratory waterfowl. Five natural basins were enhanced by installing small check levees at the mouth of each

basin. The levees impound water two to twelve inches deep in the basins, enabling the basins to hold a more constant water level during the winter months. Four brood ponds were also created to provide more standing water for nesting waterfowl during the summer, resulting in approximately 3.5 acres of additional waterfowl habitat. A small island in the middle of each pond provides nesting sites that are safe from potential predators.

The entire area of the Dean Creek EVA is closed to all forms of hunting. The area is also closed to public access except for designated public use facilities. There is no overnight camping allowed in the viewing areas.



CHAPTER 2

EXISTING RESOURCES AND DEVELOPMENT

A. Physical Resources

Soils

Soil of the bottomland is classified as Coquille silty clay loam, somewhat poorly drained (SCS 1992). The soil contains some organic peat-like material that was formed during the period when the area was a salt water marsh.

The uplands are composed of well-drained soils formed in colluvium and residuum from sedimentary rocks.

Hydrology

The depth of the water table in the Dean Creek EVA ranges from 6 to 18 inches below the surface, with variances relative to slight elevation changes that occur between the pastures and wet meadows. The slightly higher elevation of the pastures creates drier sites that do not flood or pond during the growing season; however, the meadows with lower elevations, and consequently a higher water table throughout the year, may have standing water.

Most of the area's ditches are man-made with vertical banks and straight channels through the pastures. The ditches flow to six tide gates that open into the Umpqua River subject to the tidally-influenced river level. At high tide, or high river levels, the gates automatically close to preclude the brackish river water from entering into Dean Creek ditches. Conversely, when the river level drops below the tide gates, the gates open to allow the drainages to flow into the river.

The Dean Creek EVA is within the Umpqua River 100-year floodplain, and occasional flooding occurs in the winter.

Climate

Wet winters and dry summers characterize the EVA's marine climate, which is significantly influenced by the Pacific Ocean. Annual precipitation averages 64 inches, generally in the form of rain. Snow is rare, and no snow accumulation occurs. The area's mean fahrenheit temperature is 52 degrees, with summer temperatures averaging 60 degrees (Taylor 1992).

Geology

The area is underlain by quaternary alluvium consisting of unconsolidated to semi-consolidated, flat-lying sand, silt and mud. This material was deposited by the Umpqua River through frequent flooding. Beneath the alluvium is the Flournoy Formation, which is composed of Eocene age (40 million years before present) rhythmically bedded, graywacky sandstone and siltstone. According to the U.S. Geological Service, this area has a moderate to high potential for the occurrence of oil and gas.

B. Flora and Fauna

Flora

The bottomlands are a mosaic of pastures and wet meadows (Map 3). The slightly elevated, drier pastures support more facultative upland plants typically found in non-wetlands and only occasionally occurring in wetlands (FIC 1989). Unlike adjacent wet meadows, the pastures do not have standing water during the vegetative growing season.

Approximately 25 acres of pasture were improved in 1990 by reseeding with more desirable forage species that are higher in nutrients and palatability than natural pasture vegetation. Reseeded areas are dominated by perennial ryegrass, annual ryegrass, orchard grass, birdsfoot trefoil, and white clover. Because invasion occurs over time by species that are more weedy, reseeding is recommended about every eight to ten years.

There are 95 acres of unimproved pastures near the Hinsdale Interpretive Center, and another 80 acres on the east end (Map 3). These unimproved pastures have been reseeded in the past, but are now dominated by weedy species such as bentgrass, velvet grass, and meadow foxtail. Perennial ryegrass, birdsfoot trefoil, and white clover also grow in the unimproved pastures in varying amounts. Reed canary grass and patches of tussocks (rushes and sedges) grow in the more poorly-drained areas.

Generally about March, the pastures experience a spring flush of vegetative growth, which remains green and capable of growing until July. During the summer, pasture vegetation is dormant and dry due primarily to low levels of precipitation and warmer temperatures. Wetter, cooler weather conditions in late September cause vegetative greenup; however, during the winter months there is little vegetative growth.

Sedges, rushes, bulrush, cattail, and reed canary grass grow in the wet meadows, making these areas more suitable and beneficial for waterfowl use than for pasture improvements for elk.

Along the banks of the ditches are blackberries and woody species such as elderberry, willows and cottonwoods.

Uplands around Dean Creek EVA consist of a mixture of hardwoods and coniferous forests. Hardwood species are dominant due to logging of private landholdings 40 years ago, with no replanting. Present stocking of conifer reproduction ranges from 10 to 20 merchantable trees per acre. Most of the uplands have a high component of big-leaf maple and red alder with a dense understory of salmonberry, huckleberry, and sword fern. The variety of upland vegetation plays an important role in the yearly cycle of elk by provid-

ing an alternative forage source and seclusion during calving season.

Noxious weeds include tansy, Canadian thistle and purple loosestrife .

No threatened or endangered plant species have been identified at the Dean Creek EVA.

Wildlife

The wood duck and mallard are year round residents at the Dean Creek EVA. Wood ducks nest in the cavities of upland trees, while mallards nest on the grass banks of the ditches. Open waterways support populations of bufflehead, merganser, widgeon, green-winged teal and northern pintail. Songbirds include swallows, red-winged blackbirds, crows and numerous other species.

The wetlands at Dean Creek EVA are an important stopping place for a variety of waterfowl and water birds, including both the great egret and great blue heron which are frequently seen and the Northern harrier which can be seen during the summer months. Canada geese winter and nest in the Dean Creek pastures, preferring to graze on the short grass found there. Red-tailed hawks utilize open areas for feeding, and forested areas for nesting. Bald eagles and osprey are often seen in the area, and feral turkeys have been noticed just east of Dean Creek.

The uplands and forest edge provide habitat for several different upland mammals, including elk, black-tailed deer, black bear, coyote and bobcat. There is potential for cougar, too, although none have been seen. Aquatic furbearers, such as the beaver, muskrat and nutria are numerous in the area.

The main ditches support stunted populations of sculpin and sunfish species (bluegill and pumpkinseed). Threespine stickleback, shiner species and surfperch species are also found, indicating brackish water conditions. No salmonids are known to occur in the area's waterways. Reptiles and amphibians, such as garter snakes and the roughskin newt, can be found at the Dean Creek EVA.

Elk Biology

Roosevelt elk is one of four subspecies of North American elk. Roosevelt elk evolved in the old-growth forests of the Pacific Northwest, but now occur discontinuously in the northern Pacific Coast Range, from northern California to Vancouver Island, British Columbia, and from the Pacific Ocean to the Cascade Mountains (Bryant and Maser 1982).

Roosevelt bulls are approximately 92 inches in length and weigh between 700 to 1,100 pounds, while adult cow elk weigh 584 to 621 pounds (Boyd 1978).

The social organization of elk is gregarious. The main herd is composed of cows, calves and yearlings, with an older cow as the leader. Adult bulls form bachelor groups or range as individuals during most of the year. The bulls join the main herd during the breeding season, and occasionally through the early part of winter.

Rutting occurs from early September to mid-October. The most dominant bulls gather many females together into a harem, breeding with as many as possible. Meanwhile, younger bulls—kept at bay by the harem bull—wait for a chance to sneak into the harem and breed with a female. During the breeding season, bulls expend a tremendous amount of energy in maintaining and defending their harem from other bulls. Signs of the bulls' aggressiveness are apparent in their bugling, wallowing, spraying of urine and thrashing of vegetation with their antlers.

Cow elk can breed as early as their second autumn—at approximately 18 months of age—but their prime breeding age is from 3 1/2 to 8 years. Gestation takes 8 1/2 months, with calving season beginning in mid-May to June. Before calving, the cow wanders from the herd in search of a secluded area with good cover. Several days after calving, the cow and new born calf join a small nursery group for the calf's initial rearing; approximately two weeks after calving, the cows and their calves join the main herd.

Roosevelt cow elk normally produce a calf every other year, with the calf:cow ratio approximately 40:100 (Harper 1987). Reproduction is highly correlated with nutrition. Without good quality forage, a cow will not ovulate the fall after producing a calf. It will take another season until her body condition is adequate to conceive during the breeding season.

Roosevelt elk bulls, like other members of the deer family, shed their antlers in winter—anytime between February and April. After antler casting, a scab forms over the pedicle and new antler growth immediately commences. This new growth, called "velvet," is living tissue. Velvet grows for approximately three months (90 days) for spikes, and a maximum of 140 days for trophy size bulls. In August, blood supply to the antlers ceases and mineralization (hardening) of the antlers occurs. As the velvet dries, bulls rub their antlers on trees, bushes, and other objects which removes the velvet and polishes their antlers.

Antler development is timed to reach full growth prior to mating in mid-September. A mature bull's rack can weigh as much as 20 pounds and averages 48 inches in beam length. Roosevelt elk have shorter and heavier-beamed antlers than the Rocky Mountain elk. Another difference between these animals is that Roosevelt elk can develop secondary tines, or points,

which give their antlers a crown-like appearance.

Elk Habitat

The term “habitat” refers to the essential elements needed for an animal to live. Habitat has four basic components: food, water, space and cover.

Food

Elk, termed intermediate feeders, prefer to eat grass species but also consume browse. Their seasonal forage preferences, however, are highly influenced by forage availability and phenology (Nelson and Leege 1982). Generally, in the winter, elk show a preference for grass if its availability is not limited. For example, in one study of Roosevelt elk in southwestern Oregon forests, grass comprised only 30 percent of their diet in the spring and summer, compared to over 50 percent in autumn and winter (Harper 1971). In central Washington, a forage study showed that grasses comprised 62 percent and 85 percent of elk diets in 1971 and 1972, respectively (Nelson and Burnell 1975).

Animals require protein for tissue production and repair, fat and carbohydrates for energy, and minerals and vitamins for many bodily functions. For grazing animals, energy is the major nutrient needed for bodily functions (Stoddart et al. 1975).

Digestibility reflects the amount of nutrients in a forage that an animal can utilize (Moen 1973). For example, while grass straw and alfalfa hay have similar gross energy values, alfalfa—because of its higher digestibility—provides significantly more nutrients, including energy, to the grazing animal. The correlation between the ability of a forage to supply animal nutrient requirements and forage digestibility is a basis for determining forage quality.

Herbaceous forage has a yearly pattern in nutrient quality with the highest concentration of crude protein, energy, vitamins and water occurring in spring when there is new vegetative growth (Heady 1975). This young forage meets nutrient requirements and also is very palatable to animals (Stoddart et al. 1975).

Pasture improvements such as forage conditioning, fertilization, reseeding and prescribed burning can improve forage quality and extend its period of palatability for elk. Clover and grass pastures grow best when maintained at heights of between two and six inches (Cannon et al. 1990). Plants that are less than two inches high grow slowly because they have minimal leaf area, which is used to assimilate energy for growth. Once above eight to 12 inches, a plant is shaded by its own leaves which decreases the efficiency of photosynthesis in the lower leaves and likewise decreases the plant’s production.

The taller plants stop growing to allocate energy to form cell wall material for structural support. This cell wall accumulation makes the grass coarse, decreasing its digestibility. Clipping at this stage—when the plant has stopped growing—only removes mature vegetation; no conditioning benefit is gained.

The flush of vegetative growth in April and May in western Oregon produces too much forage for the elk to utilize. Clipping of plants that are still in their growth cycle (March-June) stimulates replacement of clipped leaf material. This process is called vegetative conditioning. If not clipped, plants stop growing and establish cell wall material as discussed above.

Vegetative conditioning is supported by several studies. Both forage quantity and palatability can be improved by fertilization (Cook 1965, Heady 1975). Farstvedt (1977) reported that fertilized plots on pastures located three miles south of the mouth of Dean Creek started growing earlier in the spring and produced more forage than unfertilized pastures. Studies also showed that elk preferred grazing fertilized plots.

Along the northern Oregon Coast in Clatsop County, Mereszczak (1979) studied forage quality and elk preference of pastures at Jewell Meadows, Oregon. That study showed elk preferred perennial ryegrass pastures that had been hayed and fertilized over bentgrass pastures that received the same treatment, and over untreated bentgrass pastures. Further, nutritive analysis indicated that ryegrass pastures were higher in digestible protein and digestible energy than bentgrass pastures in the winter.

Established pastures need fertilization, not only to maintain the more preferred forage species, but to maintain production. In southwestern Oregon, the major limiting nutrient is nitrogen (Cannon 1988), which is required for the best grass production. Clover — another major forage species — requires the nutrients phosphorus, sulfur and molybdenum, and is a source of nitrogen. The nitrogen provided by clover, however, must first be broken down to a usable form through a process such as animal digestion or soil decomposition (Cannon et al. 1990). In the winter months, the soil temperatures are too low for soil microorganisms to activate the nitrogen production process, and fertilization then becomes necessary to increase the winter and early spring (March) growth of the pastures.

Water

While the distance elk travel from water varies, most studies have found that elk inhabit areas within a half mile of a permanent water source (Skovlin 1982). At the Dean Creek EVA, the quantity of water is not a limiting factor, but its quality may influence the health of the herd. Water that is held in the ditches, rather than being released into the river, becomes brackish and creates

a reservoir for disease and parasites.

Space

Space refers to the area needed for normal daily functions such as feeding, resting, traveling, loafing and reproducing. For Roosevelt elk in southwest Oregon, the home range is four square miles for cows, and between four and six square miles for bulls (Harper 1987). Elk are gregarious and form herds of different sizes. Coastal elk may utilize one area year round. Factors contributing to the non-migratory nature of coastal elk are the mild weather patterns, the absence of snowpack, and the lack of seasonal elevational changes in plant phenology.

Cover

The three types of cover utilized by elk are hiding, thermal and optimal cover (Wisdom et al. 1985). Hiding cover, which provides visual screening from disturbance and predators, is defined as vegetation capable of hiding 90 percent of a standing elk at 200 feet or less. Thermal cover buffers animals from extremes in temperature, wind, rain and humidity during all seasons of the year. A forest stand that is at least 40 feet in height with 70 percent canopy cover will provide thermal cover. Optimal cover provides both hiding and thermal cover and also forage during prolonged periods of adverse weather.

In general, the greatest utilization of forage areas is within 200 feet of the forest edge (Witmer et al. 1985). Lack of cover may be offset by the availability of nutritious forage and/or restricted human disturbance.

Elk may learn to avoid areas, or change from day-time to night-time activities, where disturbed repeatedly (Geist 1982). Where disturbances are limited, such as in national parks and the Dean Creek EVA, elk can become habituated to human presence. In New Zealand game farms, elk have even become domesticated.

Daily Activities of Elk

Generally, elk begin their day actively feeding at first light, and then bed down to ruminate for several hours (Skovlin 1982). (Ruminating is the process of digesting food through repeated regurgitation and mixing of the stomach contents.) The late afternoon is spent loafing, or feeding if forage is scarce. Elk again graze for two to three hours until sunset when they bed down to ruminate. Elk sleep only a few hours a day.

Daily activities are highly correlated with temperature and relative humidity (Harper 1987). With high temperature and low humidity, as in the summer, elk will feed during early morning and late evening, retreating to the forest cover during the day. On cool or rainy days, elk are active throughout the day, and away from heavy cover.

Disease and Parasites

Bacterial diseases are rare in western Oregon elk herds. Those with the greatest potential of being spread between cattle and wildlife are Brucellosis and Leptospirosis, both of which cause abortion and infertility. Neither of these diseases, however, have been found in western Oregon elk herds (Harper 1987).

Parasites, on the other hand, are extremely common in western Oregon elk herds. Two parasites that are common at the Dean Creek EVA are Lungworm and Liverflukes, which in most cases are not harmful to the elk. Parasites are host-density dependent, meaning the chance that an elk will come into contact with parasites increases along with the number of elk in an area. While parasites thrive during the summer, winter infestations can be intensified by mild winter temperatures in western Oregon. The chance of infection can be decreased by employing management practices that maximize nutritional value of the forage, encourage elk dispersal, and reduce the concentration of parasites in the pastures. Some of the strategies used are excluding elk on certain areas and maintaining short pasture grass which opens the area to sunlight and drying (Harper 1987).

Lungworms are found in the air passages of elk, black-tailed deer and cattle. While the majority of Roosevelt elk host small populations of the worm without suffering negative effects, large lungworm populations can be fatal. Lungworm larva are passed in the feces, develop on the ground to the infective stage, and then climb vegetation where they can be consumed by grazing animals. The larva pass through an animal's intestine and are carried by the blood to the lungs where they develop into adults in the air passages.

Liver flukes cause liver cysts which are generally harmless. Requiring a fresh-water, semi-aquatic snail for an intermediate host, the liver fluke thrives in areas such as the Dean Creek EVA that have high rainfall and low marshy wetlands, or are adjacent to permanent water sources.

C. Existing Facilities

Facilities now at the Dean Creek EVA include two viewing areas, one approximately mid-center (Hinsdale Interpretive Center) and the other at its western end. There are also ranch facilities at the EVA's east end (Map 2). The main viewing area is the Hinsdale Interpretive Center, an open air building that overlooks pastures and houses interpretive signs on elk history and biology. The Center's parking lot has spaces for 11 cars and 10 oversized vehicles, and there is also a parking lane along the southern edge of the frontage road. The west viewing area emphasizes wet meadows, waterfowl, and waterfowl habitat. Permanent vault restrooms are being constructed at the west end parking lot and also along the frontage road, just west of the Hinsdale Interpretive Center.

The East-End Ranch, once a homesite, has a house and several outbuildings including barns (Map 7). The two-story older home, with a new addition, has 3,500 square feet of space including five bedrooms, a large living room and a family room. Next to the house is a two-car garage. Also on the site is a 24x36 foot two-bedroom mobile which may be subject to removal depending on structural analysis. Other buildings include a 20x72 foot utility building, concrete milking parlor and bottling barn, and a horse barn. Another building, measuring 60x120 feet, contains an indoor riding arena, stalls, and a tack room. The ranch's water system is dependent upon overland flow collected above the Hinsdale Slough and piped to three different homesites. A storage reservoir holds approximately 400 gallons of water.

Dean Creek Elk Viewing Area is bordered along its entire northern edge by Oregon Highway 38. The entrance to the ranch is located at the extreme east end of the EVA, junctional with Highway 38. The entrance road to the intensive management pastures on the west end is built on the dike of Koepke Slough and ends at the forest edge. An old road bed that once connected the east-end ranch to the western edge of the EVA is now only open from the area's western edge to the entrance road (Map 2). Most of the year, however, this road bed is impassable due to muddy conditions. In the uplands are several old logging roads now overgrown with hardwoods.

A right-of-way fence, with some sections of barbed wire and some with woven wire, parallels the entire length of the highway along the Dean Creek EVA. The section west of Koepke Slough to the west viewing area is a 54-inch high, woven-wire fence that was installed within the last five years. The section west of the ranch house to the Hinsdale Slough is a 55-inch high woven-wire fence that was installed in 1992. The rest of the right-of-way fence is old and needs to be replaced.

Short, cross fences in the intensive management areas are used to separate pastures during times when cattle grazing is prescribed for vegetative conditioning. The gates are closed only when cattle are on the area, and the fences are designed to allow easy crossing by elk. An above-ground powerline runs east-west through the southern section of the bottomlands.

D. Literature Cited in Chapter 2

- Boyd, R.J. 1978. America Elk. Pages 11-29 In: J.L. Schmidt and D.L. Gilbert (eds.) Big Game of North America. Stackpole Books, Harrisburg, PA.
- Bryant L. D. and C. Maser. 1982. Classification and Distribution. Pages 1-59 In: J. W. Thomas and D. E. Toweill (eds.) Elk of North America, ecology and management. Stackpole Books, Harrisburg, PA.
- Cannon, L. E. 1988. Guide to pasture and grazing management for southwestern Oregon. Oregon St. Ext. Serv., Corvallis, OR. 9 pp.
- Cannon, L. E., M. Gamroth, and P. J. Ballerstedt. 1990. Managing dairy grazing for the most efficient yields. Oregon St. Univ. Ext. Serv. EM 8412. Corvallis, OR. 4 pp.
- Cook, G. W. 1965. Plant and livestock responses to fertilized rangelands. Utah Agric. Exp. Sta. Bull. 455. 35 pp.
- Farstvedt, G. 1977. A report on forage production and utilization at Dean Creek elk pasture. Oregon Department of Fish and Wildlife, Southwest Region. 12 pp.
- Federal Interagency Committee for Wetland Delineation (FIC). 1989. Federal manual for identifying and delineating jurisdictional wetlands. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington D.C. Cooperative techn. publ. 76 pp.
- Geist, V. 1982. Adaptive behavioral strategies. Pages 219-277 In: J. W. Thomas and D. E. Toweill (eds.) Elk of North America, ecology and management. Stackpole Books, Harrisburg, PA.
- Harper, J. A. 1987. Ecology and management of Roosevelt elk in Oregon. Oregon Dept. of Fish and Wildl. 70 pp.
- Harper, J. A. 1971. Ecology of Roosevelt elk. Oregon St. Game Comm. 44 pp.
- Heady, H. F. 1975. Rangeland management. McGraw-Hill Book Company, San Francisco, CA. 460 pp.
- Mereszczak, I. M. 1979. The effects of three levels of range improvements on Roosevelt elk nutrition. M. S. Thesis, Oregon St. Univ., Corvallis, OR. 86 pp.

- Moen, A. N. 1973. Wildlife ecology, an analytical approach. W. H. Freeman and Co., San Francisco, Cal. 458 pp.
- Nelson, J. R. and D. G. Burnell. 1975. Elk-cattle competition in central Washington. Range Multiple Use Management. Moscow: Univ. Idaho. 172 pp.
- Nelson, J. R. and T. A. Leege. 1982. Nutritional requirements and food habits. Pages 323-367 In: J. W. Thomas and D. E. Toweill (eds.) Elk of North America, ecology and management. Stackpole Books, Harrisburg, PA.
- Skovlin, J. M., 1982. Habitat requirements and evaluations. Pages 369-413 In: J. W. Thomas and D. E. Toweill (eds.) Elk of North America, ecology and management. Stackpole Books, Harrisburg, PA.
- Soil Conservation Service (SCS). 1992. Soil survey of Douglas Co. Oregon, in progress. Roseburg, OR.
- Stoddart, L. A., A. D. Smith and T. W. Box. 1975. Range Management. Third ed. McGraw-Hill Book Co., New York, N.Y. 532 pp.
- Taylor, G. H. 1992. 1983-1991. Temperature and Precipitation Records. Gardiner, Oregon-3139 weather station. Oregon St. Univ., Corvallis, OR.
- Wisdom, M., G.W. Witmer, E. P. Harshman, R. J. Anderson, C. Carey, M. P. Kuttel, I. D. Luman, J. A. Rochelle, R. W. Scharpf, and D. Smithey. 1985. Deer and Elk. Pages 231-258 In: E. R. Brown (ed.) Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington. Part 1 - Chapter Narratives. U. S. Dept. Agric., For. Serv.



CHAPTER 3

VISITOR USE AND DEMAND

A. Importance of Dean Creek EVA

The Dean Creek Elk Viewing Area is one of the Northwest's premier wildlife viewing areas. Its existence is largely credited to the efforts of the Reedsport community and actions of the BLM and the ODFW, which have worked together to retain the site and provide visitor services. The viewing areas and interpretive facility developed within the last few years at the EVA are in response to a growing demand for safe viewing and educational opportunities. This demand came from local residents, and also regional and distant visitors, all keenly interested in observing and learning more about elk and other wildlife.

In determining how to best meet the demands of varied audiences, the BLM is giving consideration to current as well as future visitors, including educational groups and southern Oregon coast residents. An important function of visitor services at Dean Creek EVA is to provide general information and fascinating facts that will make the wildlife viewing experience a memorable one visitors will want to share with others on repeat visits.

B. Visitor Use Zones Introduction

For planning purposes, eight visitor use zones have been identified for public use at the Dean Creek EVA (Map 4). At this time, only four of these eight zones have actions recommended for implementation. The zones were designated to provide different visitor uses while having the least impact to the wildlife and their associated habitats. Heavy wildlife use of Zones 2, 4 and 8 was the main reason for precluding these three zones from public use consideration at this time. In Zone 5, no actions have been identified. All zone proposals are described below.

Zone 1 - Wetland Viewing Area

The Wetland Viewing Area emphasizes waterfowl and their associated habitat. This area provides the visitor with a chance to view the wetland and wildlife such as the wood duck, mallard and great blue heron.

The frontage road has a parking lane and sidewalk along its full length, and connects the Wetland Viewing Area with the Hinsdale Interpretive Center.

Zone 2 - Forest Jeep Trail

Zone 2, one of the four zones without actions, is used heavily not only by elk but also by other wildlife. More information is required on elk use patterns in the area and on the interaction of human activity and wildlife before visitor use actions can be prescribed in this zone.

Zone 3 - Hinsdale Interpretive Center

Hinsdale Interpretive Center is an open air pavilion overlooking the adjacent pasture. The building contains displays on elk history and biology. Also soon to be displayed here is a donor recognition plaque recognizing those who contributed to the funding of the building through the coordination of Dean Creek Wildlife Incorporated.

Zone 4 - Elk Viewing Pasture

This zone focuses on the pastures near the Hinsdale Interpretive Center and the road along Koepke Slough. This zone was rejected from further planning consideration because elk use this section frequently, and because the viewing area at the Hinsdale Interpretive Center provides a clear view of this pasture.

Zone 5 - Tussock Pasture

In this zone, the focus is on two pull-off areas on the southern edge of Highway 38, which provide a view of the Tussock Pasture between Koepke and Hinsdale Sloughs. No further developments are planned for this zone.

Zone 6 - East Viewing Area

Highway safety is a major goal for management at the Dean Creek EVA. This viewing area is proposed to alleviate highway safety problems occurring along the EVA's east end pasture and bottomlands which elk have historically used. Construction of an East Viewing Area would provide a safe area for visitors to park off the highway to enjoy wildlife viewing.

Also included in this zone would be an access road to provide safe vehicle ingress/egress to the ranch. Currently, the ranch entrance road presents a safety hazard due to the absence of ingress/egress lanes, the sharp turning radius from the highway, and the road's single-lane width. Public use of the ranch for a visitor center is contingent upon providing safe access.

HINSDALE
INTERPRETIVE
CENTER

UMPQUA

RIVER

EAST END
RANCH

Dean
Cr.

Koepe Slough

Hinsdale
Slough

38

LEGEND



Woodland

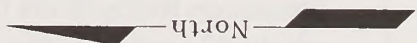


Bottomland



Visitor Use Zones

1. Wetland Viewing Area
2. Forest Jeep Trail
3. Hinsdale Interpretive Center
4. Elk Viewing Pasture
5. Tussock Pasture
6. East Viewing Area
7. East End Ranch
8. Upland Trail



ACAO Rel. 11 DCACT4.DWG kph 10/7/92

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

DEAN CREEK ELK VIEWING AREA

MAP 4

VISITOR USE ZONES

Another proposal for Zone 6 is a .05-mile walking path—the Hinsdale Slough Trail—that would guide visitors along the highway right-of-way to the Hinsdale Slough.

Zone 7 - East-End Ranch

The East-End Ranch is a key zone for visitor use in this activity plan. The preferred alternative is to use the ranch as a visitor contact center and also as a support area for environmental education programs and staff management needs.

Zone 8 - Upland Trail

This zone focuses on Dean Creek and the upland forest southwest of the ranch. Viewing opportunities from the dike include the creek and the wetlands on the southern side of the dike.

Development of a trail will not be pursued because the trail would impact wildlife using the area, and would disrupt elk movements on the eastern end of the area.

C. Current Visitor Use

This section includes an audience analysis defining characteristics of present and future visitors to assist the planning effort. Because there is little visitor use data and research specific to the Dean Creek EVA, the analysis relies heavily on visitor use data from Oregon Travel and Tourism (Runyan and Associates 1989) compiled for the Oregon Tourism Division; site development at Yaquina Head Outstanding Natural Area (Runyan and Associates 1990); and Coos Bay Shorelands Interpretive Plan-Draft (Andersen et al. 1990).

Each year approximately 1.3 million vehicles travel Highway 38 past the EVA according to the Oregon Department of Transportation's 1992 reports. Table 1 lists some characteristics of Dean Creek EVA visitors—including user group sizes, length of stay, particular interests, group composition, and orientation needs. According to this compilation, most people are classified as “casual passersby” and spend only 15-30 minutes at the site. Other major user groups identified are the local residents, wildlife enthusiasts, Reedsport region tourists, and school groups.

In general, excluding the Portland area, the Oregon coast is the most popular destination for travelers to Oregon. The southern Oregon coast hosts approximately 40 percent of the state's total visitation. Further, wildlife viewing ranks as the fourth most popular recreational activity among visitors to

Table 1. Current User Groups at Dean Creek Elk Viewing Area ¹

User Group	Length of Stay	Type and Level of Interest	Group Composition	Orientation Onsite	Orientation Off-Site	Percent Overall Use (%)
Casual Passerby	15-30 min.	See Elk Photograph Elk Curiosity Use Scopes Little Detail	Families Individuals		X	50
Local Populations (within 1 hr. driving time)	30-60 min.	See Elk Educational Scheduled Activities Site Tours Greater Detail	Families Some Groups	X		25
Wildlife Enthusiasts	1-4 hours	See Elk, Birds & Wildlife Photographing Seek More Isolated, Individual Experiences Focused Education Experience Learn About Other Wildlife Areas Most Detail Demanded Want to Move from Parking Lot	Small Groups	X	X	5
Reedsport Region Tourists	30 min. to 4 hours	See Elk Move to Where Elk Are Take Brochures Learn About Elk Want to Walk Use Scopes Some Detail	Families Couples	X	X	10
Schools	45 min. to 2 hours	Guided Educational Programs Restrooms Group Areas Take-Away Items (brochures) Will Walk to See Elk Guided Activities Curriculum Guide Closer to Elk Some-to-Great Detail	School Groups	X		10

¹ Compiled from district observations.

Oregon. The three activities that had greater popularity included sightseeing which interests 80 percent of visitors, shopping in a small town taking 51 percent, and city shopping with 40 percent (Andersen et al. 1990). A recent national survey shows that, overall, 74 percent of travelers participate in some form of wildlife viewing as part of their leisure activities (Runyan 1992).

Also important to consider in planning the management of Dean Creek EVA is the following data from the Oregon Travel and Tourism Report (Runyan and Associates 1989):

“Oregon’s natural resources are rated very high as attractions to travelers. Over two thirds (68%) consider Oregon’s scenery exceptional with other high scores for the coast and mountains. The friendliness of Oregonians and Oregon’s recreation opportunities also received high scores. Nearly two thirds (63%) of visitors have traveled to Oregon previously, indicating a strong repeat visitor market. Travelers to Oregon are highly educated; 58% have earned a bachelor’s or graduate degree.

Resident overnight travelers who visit the south coast consists of 34% from southern Oregon, 28% from the Willamette Valley, 26% from Portland and 0% from the south coast. Resident day-use travelers consists of 36% from southern Oregon, 26% from the Willamette Valley, 19% from Portland and 8% from the southern coast. The most common length of stay is three to five nights. Pleasure travelers tend to stay substantially longer at an average of 7.3 nights and business travelers stay a shorter period of 4.3 nights.”

Table 2 lists the most common activities for Oregon visitors, by percentage of participation, and also according to out-of-state or residential status.

Table 2. Most Common Activities for Oregon Visitors ¹

For Out-of-State Visitors to Oregon:

<u>Activity</u>	<u>Percent</u>
Relaxation or sightseeing	80
Visiting historic site or area	45
Hiking	36
Picnicking	35
Viewing wildlife	25
Camping	23

Table 2. Most Common Activities for Visitors ¹ (Continued)

For Oregon Resident Visitors:

<u>Activity</u>	<u>Percent</u>
Relaxing/sightseeing	72
Visiting friends or relatives	68
Hiking	37

¹ (Runyan and Associates, 1989)

D. Projected Visitor Profile

Development of the Dean Creek EVA Activity Plan considered the projected demand from 1988-1993 for outdoor recreation activities based upon available information about the kinds of recreation in which people participate, and the places and frequency of such use (OSCOP 1988). The activities expected to experience high growth rates include wildlife viewing, outdoor photography, and nature study. The projected demand for hiking, walking, climbing and wildlife viewing over that five-year period was almost 9 percent, and fishing was over 12 percent. These projections, however, are for Oregon residents only; heavy visitation from California could significantly increase out-of-state participation.

E. Visitor Needs

Information on current recreational use of the Dean Creek EVA is divided into two general categories — local residents and visitors, the latter being subdivided into state residents, out-of-state tourists, and foreign travelers.

While all visitors have some similarities, there are some obvious differences. For example, visitors and residents are alike in their desire to see elk at Dean Creek EVA and spend some time viewing other wildlife, but each have their own use patterns and length-of-stay.

Interpretive needs that are basic for all visitors include orientation (direction and access) information and use regulations. Visitors who cannot successfully find their way will be unreceptive to interpretive information. Both major user groups need to know where to satisfy their basic needs for water, food, shelter, and restroom facilities. Upon reaching a site, visitors need an area to park their vehicles including large recreational vehicles.

Knowing the distinctive characteristics of recreational and resident visitors' needs is important for interpretive planning. For example, recreational visitors

want to know an area's attractions and activities, how to access these features, other regional information such as distance to the next town, and also availability and access of other regional attractions. By contrast, residents—already familiar with regional information—are more interested in site information and local history.

Facilities that provide high quality interpretive experiences include visitor information centers, interpretive programs, additional viewing opportunities, contact with managing agency staff, and trails.

Recreational Visitors

Recreational visitors base their expectations upon what they have seen or heard prior to visiting the area, previous visits, or past experiences in other areas. Visitor expectations can also be influenced by statewide and coastal regional marketing strategies. For example, Oregon's Office of Tourism markets the natural beauty of Oregon, often picturing the stunning coastal landscape in posters and advertising.

Expectations

Visitors at Dean Creek EVA will expect:

- A coastal forest and meadow setting.
- Elk and other wildlife viewing opportunities.
- Easily locatable features and activity choices that best meet their needs.
- Elk and wildlife in a protected setting.
- Facilities developed according to the character of the surrounding environment.
- Higher levels of quality interpretation. (This will be particularly true for frequent travelers, who have most likely experienced other interpretive facilities.)

Special Needs

The special needs of recreational visitors depend upon their varying physical abilities, amount of time available, educational level and learning style, and their overall cultural background. Generally, visitors want the freedom and opportunity to choose from a variety of activities, and yet, most have only a specific amount of time which means activities will compete for attention.

Recreational Residents

A resident is defined as anyone living within the Coos Bay/Reedsport regional area who is not solely visiting for recreation, including people commuting past Dean Creek on their working route. Orientation needs of residents differ

from visitors in that residents are already familiar with the regional area's opportunities and will discover many facilities and features independently. Residents constitute a portion of the new users in any new recreation facility that is developed.

Expectations

To a large degree the expectations of residents depend upon their lifetime experiences and the various activities to which they have been exposed in their immediate environment. When compared to other groups of visitors, residents tend to have more developed attitudes and opinions towards their surroundings and the agencies which are their neighbors.

Residents expect the Dean Creek EVA to be available for traditional types of activities such as elk viewing, and they also expect the EVA's character to remain static or improve.

Special Needs

Residents have similar special needs as other recreational visitors in regards to varying physical abilities, amount of time available, different educational levels, learning styles and cultural backgrounds. Major differences are that residents may have more time available and will be repeat visitors due to ease of access and close proximity to Dean Creek EVA.

One significant distinction is that residents may have a need for more ownership in the planning and designing of facilities for Dean Creek EVA. They may want to provide more input to feel involved in the projects that affect them directly.

The resident group can significantly influence management of natural and cultural resources of Dean Creek EVA when considering that respectful attitudes and wise use of resources begin with residents setting an example for visitors. In this regard, it is important to reach the resident group with interpretive programs and messages related to conservation of wildlife and natural resources.

Future Needs

Maintaining contact with local residents and other user groups is important in the future planning of interpretation and recreation at Dean Creek EVA. Such involvement will help avoid possible user displacement or conflicts in the design of developed facilities. It can also be a tool to help preserve the character of traditional use areas and to involve users in enhancement activities.

F. Literature Cited in Chapter 3

- Andersen, R., P. Carroll, B. Hudson, R. Pullen, and L. Anderson-Gale. 1990. Coos Bay Shorelands Interpretive Plan - Draft. Bureau of Land Manag., Coos Bay Dist., North Bend, OR. 69 pp.
- Oregon Statewide Comprehensive Outdoor Recreation Plan 1988-1993 (OSCORP) 1988. Oregon State Parks and Recreation Division. Salem, OR. 90 pp.
- Oregon Department of Transportation (ODOT). 1992. Personal communication, Roseburg, OR.
- Runyan, D. and Associates. 1989. Oregon travel and tourism, visitor profile, marketing, and economic impact. Tourism Division, Oregon Economic Development Department, Salem, OR. 154 pp.
- Runyan, D. and Associates. 1990. Visitor profile and impact analysis: site development at Yaquina Head Outstanding Natural Area. For: Bureau of Land Management, Eugene District Office. Portland, OR.
- Runyan, D. 1992. Economic benefits of watchable wildlife sites - Draft. Pages 127-130. In: Nature Watch. Defenders of Wildlife.



CHAPTER 4

MANAGEMENT PROGRAM

A. Management Strategies: Issues, Goals, Objectives and Actions

The key to a successful management plan is issue resolution. For the Dean Creek EVA, six major issues have been identified: Highway Safety; Management of Different Habitats; Elk Herd Size; Pasture Management; Public Use and Facilities; and Area Administration, Use Supervision, Monitoring and Research. Each issue influences development of the management program as described below. Detailed site planning and facility design will be done at the area level as the specific actions are implemented. An action timeline is located at the end of this chapter for the 66 actions that are identified.



Issue 1 - Highway Safety

Providing visitors with safe viewing areas at the Dean Creek EVA is a critical issue. While the EVA provides an opportunity to view elk and other wildlife from Highway 38, there are few turn-off lanes. Under the current situation, travelers viewing wildlife from the highway create a serious safety hazard.

Goal

Provide safe opportunities for the public to view and study elk, other wildlife and their habitats at the Dean Creek EVA.

Objective

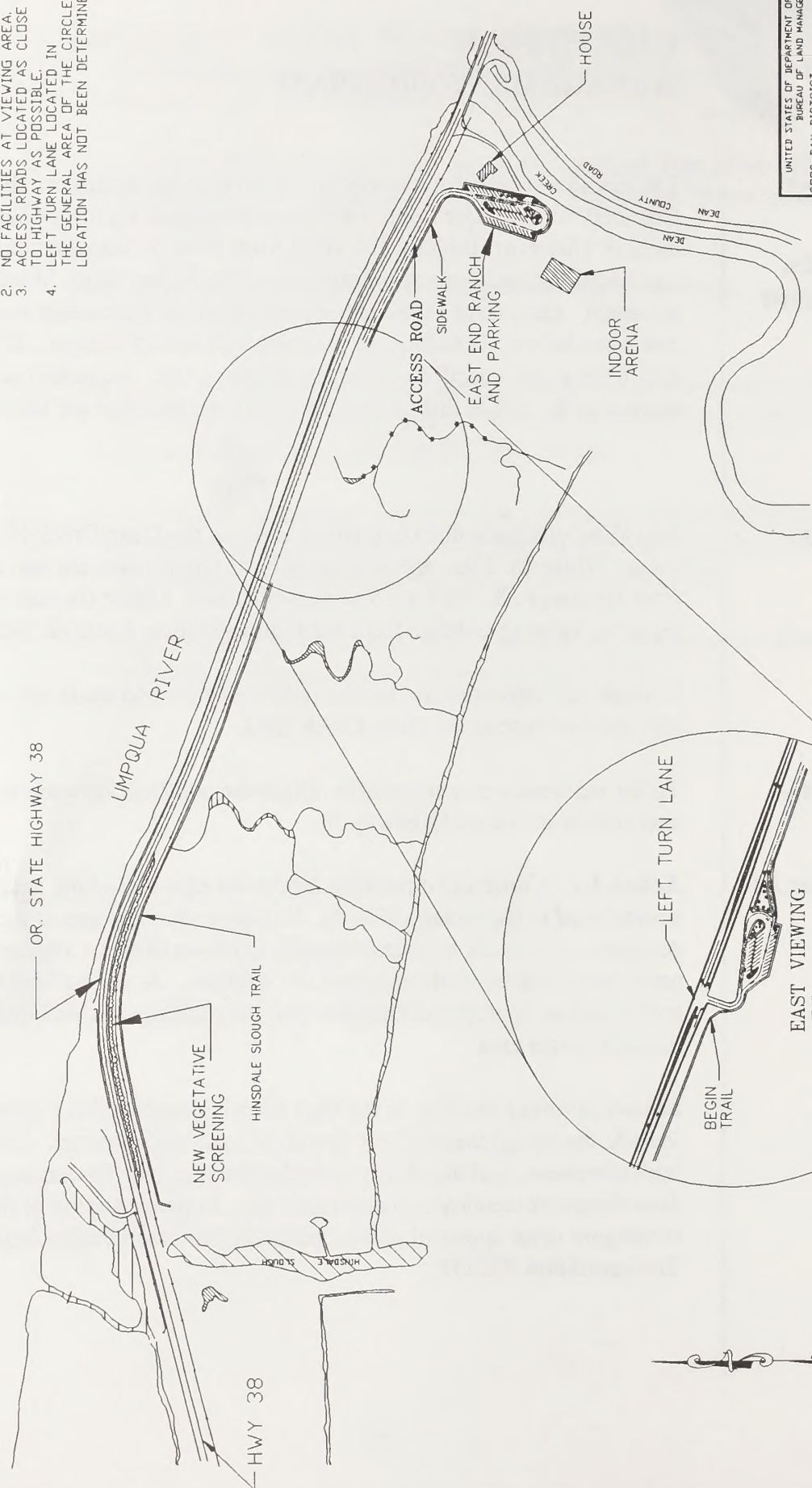
To the maximum extent possible, eliminate conflicts between wildlife viewing and vehicle traffic on Highway 38.

(Actions 1.1 - 1.5)

Action 1.1 - Construct a parking lot on the east end of the area with an access road to the ranch (Map 5). Having a viewing area at the east end pastures—which elk have traditionally used—will allow visitors a safe area to park their vehicles while enjoying the wildlife. A turning lane for westbound traffic and an appropriate entrance into the parking area will alleviate the hazards in this area.

Factors favoring location of the East Viewing Area at this highway section include the straightness of this stretch of road, unobstructed viewing from both directions, and the ability to widen the highway for turning lanes without disturbing wet meadows or drainageways. Implementation of this action is contingent upon approval and cooperation from the Oregon Department of Transportation (ODOT).

1. VIEWING AREA MINIMUM SIZE, SUFFICIENT FOR RV, TURNAROUND.
2. NO FACILITIES AT VIEWING AREA.
3. ACCESS ROADS LOCATED AS CLOSE TO HIGHWAY AS POSSIBLE.
4. LEFT TURN LANE LOCATED IN THE GENERAL AREA OF THE CIRCLE. LOCATION HAS NOT BEEN DETERMINED.



UNITED STATES OF DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT	
CODS: BAY DISTRICT	DRECON
MAP 5	
EAST VIEWING AREA	
DESIGNED: DENNIS M. GRAHAM	
REVIEWED	
APPROVED	
DRAWN: D.M.G.	SCALE: AS SHOWN
DATE: 12-7-92	SHEET OF
DRAWING NO.	

GRAPHIC SCALE
 0 50 100 200 400
 (IN FEET)

The access road to the ranch house is needed to provide safe access before the house can be used for public use. The current ranch entrance on the dike is a safety hazard as there are no ingress/egress lanes, the turning radius from the highway is sharp, and the road is only one-lane wide.

Several other alternatives to resolve highway safety were considered but deleted from further review. An Oregon Highway 38 bypass route alternative considered Highway 38 being routed around the southern edge of the Dean Creek EVA and connecting to the Schofield County road. Other alternatives included: removal of pull-off lanes along the highway to decrease the number of vehicles pulling over to view wildlife; full length frontage road from the East-End Ranch to the western border of the Dean Creek EVA; complete vegetative screening from the highway; access through the East-End Ranch to the levee and into the uplands; widening of the highway for turning lanes at the entrance to the ranch; and construction of a bridge across Dean Creek, which included widening the Dean Creek County Road.

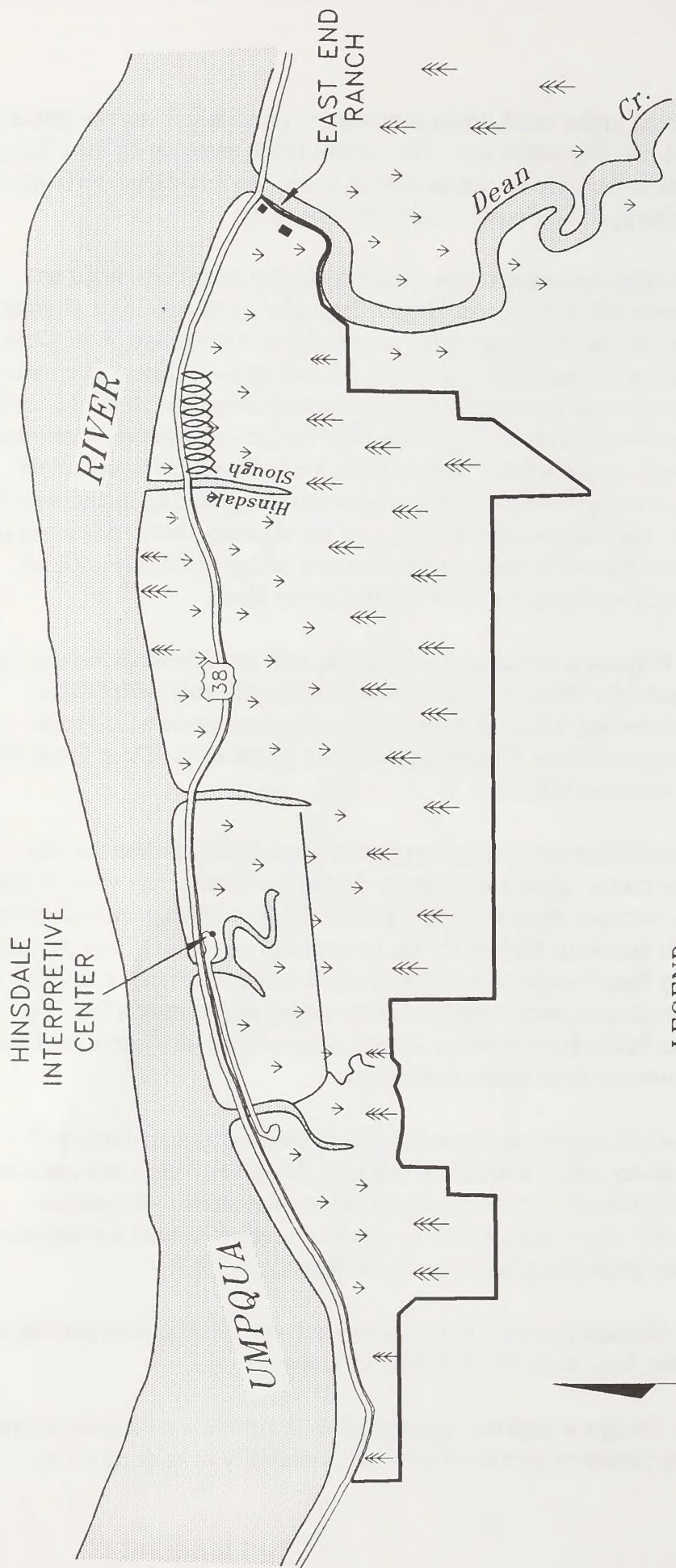
Action 1.2- Prepare a visual screening plan, with the Hinsdale Slough curve as the first priority (Map 6). The plan will be coordinated with ODOT. Vegetative screening will look natural, and will target areas which have highway safety problems. Currently, the entire length of the Dean Creek EVA can be seen from the highway.

The Hinsdale Slough curve is given priority because the elk frequent the southwestern corner of the east pasture. Motorists have a clear view of Dean Creek EVA from this stretch of the highway which enables them to continue driving while scanning the area for the presence of elk. This situation causes a great safety hazard as there are no pull-off lanes near this curve, and the limited sight distance restricts drivers from seeing oncoming traffic. The Oregon State Police have reported several close calls on this curve, and have expressed concern about safety in this area.

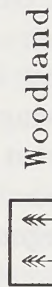
Establishment of vegetative screening at the Hinsdale Slough curve will alleviate highway safety hazards by blocking the drivers' view and encouraging the use of pull-off or parking areas to view the wildlife. Vegetative screening will enable management to monitor its effectiveness for screening plans in other areas along the highway at Dean Creek EVA.

Action 1.3- Manage pastures to encourage elk use in areas that provide safe viewing. (See Issue 4, Action 4.1, 4.2, 4.3 and 4.4).

Action 1.4 - Design a highway signing plan. Informational and directional signs will be placed to alert drivers of the availability of parking areas,



LEGEND



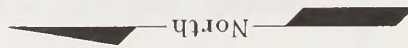
Woodland



Bottomland



Proposed Vegetative Screening



ACAD Rel. 11 DCACT6.DWG kph 10/7/92

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

DEAN CREEK ELK VIEWING AREA

MAP 6

VEGETATIVE SCREENING
PROPOSED FOR HWY. 38

Issue 2 - Management of Different Habitats

Goals

Objectives

location of pull-off lanes, and the possibility of highway congestion. The Oregon Department of Transportation will be a key partner in preparing this sign plan. The plan will also include information signs on Highway 101, near the community of Reedsport.

Action 1.5 - Replace or repair all right-of-way fences that are no longer structurally sound, with fence that will deter elk and other wildlife from crossing onto the highway. Elk on the road create a risk for vehicle accidents. The combination of a fence and the steep embankment of the highway should deter elk from crossing onto the highway. Currently, the right-of-way fence along the west-end and the fence between Koepke and Hinsdale Sloughs need to be replaced. Other sections of the fence will require annual repair.



The Dean Creek EVA is composed of different habitats including pasture, wet meadows, riparian areas, and upland forest. While elk are the featured species, there is an opportunity to manage the varied habitats for viewing other species that also inhabit the EVA. If managed for a combination of elk, waterfowl, and other wildlife, the area's habitats will need management that optimizes suitable habitat for these various species. The degree to which the different habitats are managed or enhanced is a critical planning decision. There are two specific questions: (1) How much of the pastures should be maintained for the elk? (2) Should existing wet meadows be enhanced or expanded for waterfowl and associated wildlife?

1. Maintain various habitats to provide a diversity of wildlife viewing opportunities.
 2. On the bottomlands, emphasize elk forage maintenance and production; where suitable vegetative and soil conditions exist, emphasize maintenance and enhancement of wet meadows.
 3. Manage the upland forests with an emphasis on diversity to enhance elk and other wildlife habitat, provide a full range of viewing experiences, maintain visual quality, and foster a public appreciation of the complex relationship of habitat to wildlife. Wildlife habitat objectives will be the guide for forest management.
-
1. Manage pastures for elk forage by forage conditioning and pasture improvements.
 2. Enhance wetland habitats for waterfowl, shorebirds and other watchable wildlife species.

3. Enhance riparian areas for the benefit of wildlife.
4. Provide grazing opportunities for Canada geese.
5. Manage for forest diversity to benefit wildlife.

(Actions 2.1 - 2.9)

Action 2.1 - Manage pastures for high quality elk forage. Areas classified as pasture and reseeded pasture will be managed to produce high quality forage for the elk (Map 3) (See Issue 4, Action 4.1, 4.2, 4.3 and 4.4).

Action 2.2 - Maintain wetland habitats for waterfowl, shorebirds and other watchable wildlife species through the use of water-control structures. The structures will allow the natural basins to increase the amount of standing water available during a longer time for use by waterfowl and associated wildlife. Wetland enhancement structures will require maintenance to ensure they continue to function properly.

Action 2.3 - Provide increased nesting opportunities for avian species in a manner that will maintain the area's natural appearance. Goose-nesting platforms and wood duck boxes will provide needed nesting structures. Osprey-nesting opportunities will be enhanced through the installation of natural-appearing structures.

Action 2.4 - Provide maximum security from human disturbance during the breeding and nesting season of waterfowl. Human activity will be limited to the public use areas or supervised by agency employees through guided walks.

Action 2.5 - Enhance riparian areas for the benefit of wildlife. Reintroduce native riparian vegetation such as willow, alder and ash to the riparian areas to provide cover, screening and species diversity. Transplant seedlings from upland areas. Provide bank tapering of approximately 5:1 to increase the water-holding capacity of land adjacent to the ditches in the wetland-emphasis area.

Action 2.6 - Provide upland meadow habitat for elk forage (Map 2). In the uplands, provide partial openings of 0.5-acre to 5 acres that are seeded to grass and broad-leaved plant species, and created in a manner that will not cause negative visual impact from the highway. Control annual shrubs until the grass stand is established.

The presence of the upland meadow openings is not expected to significantly affect viewing opportunities from the bottomland. Because of their limited size, the upland meadows will produce only a small amount of the total forage

required by the elk; as a result, elk use of the meadows will occur during short, random periods.

The purpose of the upland meadows is to provide elk forage that contains lower levels of parasites and disease compared to the bottomlands. In addition, upland meadows are particularly important for the elk cows during calving season as they provide forage that is higher in nutrients and energy than forage in the forest communities.

Action 2.7 - Retain hardwood component for forest diversity. The hardwood legacy will be maintained to benefit wildlife species that depend on the presence of hardwoods. A mixed vegetative stand supports more wildlife species than a pure stand of conifers.

Action 2.8 - Maintain existing number of snags for snag-dependent species. The landscape currently has a deficient ratio of snags due to past clearcutting practices. Maintaining snags will increase the opportunity for viewing several species, including primary excavators such as the woodpecker, and secondary excavators such as the western blue bird and wood duck. More than a dozen bird species depend heavily on snags for nesting habitat.

Existing snag trees will first be inventoried. Where the snag inventory is low, additional snags will be created dependent upon the availability and location of suitable trees, and also budget constraints.

Action 2.9 - Manage beaver populations in pastures that emphasize elk forage. Ditch upkeep is important to maintain the more desirable forage species (Map 3). Beaver dams in unmaintained ditches have the potential to block ditches and flood large pasture areas for a long period of time. Standing water on the pastures can damage the quality of forage by drowning preferred pasture grasses and increasing the growth and population of undesirable species. Forage quality can also be degraded by the adverse affect standing water has on soil characteristics, including increased soil acidity and the leaching of important nutrients.

In wetlands and marginal bottomland areas, beavers will be a natural component contributing to habitat diversity.



The significant limiting factors to elk herd size at the Dean Creek EVA are forage quality, disease, and parasite loads on the pasture. Forage production, which corresponds to the amount of forage available (carrying capacity), does not limit herd size. In fact, forage production is high on the area.

Goal

At the EVA, herd size varies but is normally largest in the summer after cows and their calves have joined the main herd. The herd size may also increase in the winter when other elk move into the bottomlands which have higher quality forage and increased sunlight compared to the upland forest. For this issue, the questions are: What herd size should be maintained? How will elk numbers be controlled?

Objective

Maintain and protect the elk that inhabit the Dean Creek EVA so that present and future generations of visitors can view these wild animals in a managed environment.

(Actions 3.1 - 3.2)

Manage for a healthy elk herd of approximately 60-120 elk.

Action 3.1 - Remove excess animals by trapping and transplanting yearly. The number of animals subject to removal will be determined annually by herd productivity and survival counts.

Action 3.2 - Allow natural course with a sick or injured animal. Because sickness and injury are part of the elk life cycle, some death will naturally occur. Most problems specific to individual animals will be allowed to follow their natural course. Animals that have died of natural causes will not be removed from where they are found. When deceased animals can be seen from viewing areas, a temporary interpretive sign will be placed to explain the natural cycle of life and death. Animals that create a health concern because of their location to public use areas or water ways will be removed. Animals injured from either hunting or a traffic accident will be evaluated individually and may be put to death, subject to determinations of ODFW. Diseases or parasite epidemics that affect a majority of the herd will be medically treated, if possible.



Issue 4 - Pasture Management

Providing high quality elk forage (i.e., forage that has lots of nutrients, is easily digested, and is palatable to the animals) at Dean Creek EVA necessitates that excess forage not utilized by elk be removed to allow for regrowth and improved foraging opportunities. Without plant cropping, the forage will mature and decline in nutrient value and palatability. Moreover, the mature forage creates a mat of dead and decaying vegetation through the winter that shades and impedes regrowth in the spring. If allowed to continue without intervention, this cycle eventually leads to an overall decline in pasture productivity and nutritive value for the elk. Forage quality can be improved by either forage conditioning or pasture improvements such as planting improved forage species.

Forage conditioning has been accomplished by grazing cattle, but this practice conflicts with visitor expectations.

This issue has several questions: How should pasture conditioning be achieved? How much pasture should be conditioned? Should livestock grazing continue to be used as a means to achieve pasture management objectives? If so, what conditions should be established to minimize public viewing conflicts and meet grazing management needs?

Goal

To provide high quality forage for the elk as a means of maintaining herd health and supporting public viewing opportunities.

Objectives

1. Provide high quality forage through forage conditioning and pasture improvements.
2. Maintain water control structures needed for pasture management.
3. Develop management techniques for forage conditioning, with mechanical means as the preferred alternative.

(Actions 4.1-4.4)

Action 4.1 - Conduct annual pasture management including forage conditioning, hay removal and fertilization. Pasture management will enhance forage for both elk and Canada geese.

Within physical and economic constraints, the preferred pasture conditioning technique will be mechanical mowing and haying. Grazing will continue to be applied only if other alternatives are not feasible.

The removal method for residual material will be either baling or broadcast burning. The preferred strategy is to enter into an agreement with an individual to bale and haul away the hay.

Pasture management will include annual fertilization of the intensively-managed pastures. Nitrogen fertilizer applied in late September can increase the production and quality of perennial grass pastures during the winter and early spring.

Action 4.2 - Renovate areas classified as pasture and reseeded pasture. The renovation will be done in 20-acre patches where needed to maintain favorable forage species. Schedule renovation on a five to ten year basis, depending on forage species present. Conduct research on the control of bentgrass species and other undesirable grasses.

Purchase additional mechanical equipment to facilitate reseeding in lieu of having it accomplished through contracts which incurs recurrent expense and administering. Currently, there is a tractor, rotary mower and rake at the Dean Creek EVA. Additional equipment needed for reseeding and pasture management include a plow and disk or a rototiller, roller harrow and a broadcast spreader.

Action 4.3 - Use prescribed burning as a tool to improve the condition of the pastures. Follow a Prescribed Burning Plan prepared in 1990 which outlines preliminary preparation, fire management strategies and air quality guidelines. The plan is reviewed annually and updated as needed. Burning stimulates the regrowth of pasture plants, and also helps to control disease and pests. Elk prefer to graze the new growth from burned areas.

Action 4.4 - Maintain drainage ditches by dredging to their original depth, as needed, in areas that emphasize elk forage (Map 3). The two major sloughs in the area—Koepeke and Hinsdale Sloughs—are becoming choked with material deposited from the uplands. The material deposits have formed mats across the sloughs, causing vegetation to start growing in the channels. If this debris is not removed, the sloughs will not function properly in allowing water from the uplands and pastures to flow into the Umpqua River. The pasture condition will decline rapidly due to the back flow of water onto the pastures, and loss of elk habitat will occur.

Maintenance of the sloughs will require cooperation with other federal and state agencies. Among the requirements is a joint 404 Removal and Fill Permit from the U.S. Army Corps of Engineers and the Oregon Division of State Lands. Consistency with the Oregon Coastal Management Plan will also be required.



The Dean Creek EVA not only provides high-quality wildlife viewing, but due to its location, is easily accessible to large numbers of potential visitors. Potential visitors include local area residents, other day users within a half-day's driving time, and the great number of tourists from out-of-state and out-of-region who visit the Oregon coast each year.

Clearly, a wide variety of user groups could visit Dean Creek EVA, bringing with them diverse sets of uses, needs and expectations. The level and type of public use that is allowed may have an effect on the elk and other wildlife species. Moreover, the types of users and visitor activities that are to be accommodated will greatly influence how the area is developed and managed.

The diversity of the area's users requires finding a balance between site development and wildlife habitat protection that will provide high-quality experiences for the visitors, while at the same time providing habitat protection for wildlife.

Facilities are an important factor in the visitors' overall experience. Adequate signing and sanitary facilities are needed to support planned levels of use. Consideration also needs to be given for facilities designed to enhance wildlife viewing, such as scopes and elevated viewing platforms. Other facilities may also be required to support specific interpretive, educational or recreational uses.

Specific questions relative to the public use and facilities issue are: What public uses and activities are appropriate, and where and when should these be allowed? What visitor length-of-stay should different areas and developed sites support? What facilities should be provided to support uses and activities, and where should these be located?

Goals

1. Provide facilities and programs that support visitor safety; wildlife viewing; and interpretive, educational and passive recreational uses, all of which are compatible with the elk and other wildlife that inhabit the Dean Creek EVA.
2. Manage visitor use to avoid unacceptable conflicts with, or damage to, wildlife and their habitats. In particular, manage visitor use so elk and other wildlife retain their wild instincts and actions, by providing them freedom to roam the entire area without human intervention.
3. Provide for a variety of experiences and durations to meet the visitors' diverse expectations and needs.
4. Promote public understanding, appreciation and enjoyment of wildlife resources at the Dean Creek EVA.

Objectives

1. Have beneficial interpretive and educational experiences at the Dean Creek EVA that will:
 - ✓ Promote greater public understanding and appreciation for the Roosevelt elk, other wildlife species and their habitats.
 - ✓ Increase public understanding of ecological processes and interrelationships between organisms and their environment.

- ✓ Increase public understanding of the relationships between humans and the environment.
- ✓ Foster public appreciation, action and involvement in natural resource stewardship and conservation.

2. Accommodate onsite, outdoor education experiences for students.
3. Provide unobstructed wildlife viewing from designated viewing areas.
4. Provide barrier-free access to allow people of all abilities the opportunity to experience and enjoy the Dean Creek EVA.

Actions

The actions identified under Issue 5 are presented for four visitor use zones (Zones 1, 3, 6, and 7). Zones 2, 4, 5 and 8 are not included because they were determined to be inappropriate for any development action at this time (See Chapter 3). Each zone has different media, activities and facilities that are appropriate for that site (Table 3). A total of 34 actions have been proposed for public use.

Zone 1 - Wetland Viewing Area (Actions 5.1-5.5)

The Wetland Viewing Area will have a different focus and feel than the other viewing areas, with its main purpose being to provide visitors an opportunity to view waterfowl and other wetland wildlife in a reclaimed marsh and pond setting.

Action 5.1 - Design and construct viewing decks extending from the parking lot (Figure 1). The final design and placement of viewing decks will be subject to the actual basin locations and waterfowl use of the area. This action will include installation of full-color, illustrated wildlife tiles to help visitors identify species.

Action 5.2 - Design and distribute a brochure for the Wetland Viewing Area.

Action 5.3 - Design and present live presentations and/or guided walks to small groups.

Action 5.4 - Design and install interpretive and interactive displays on the viewing decks.

Action 5.5 - Install viewing scopes on viewing decks.

Table 3. Appropriate Uses of Media, Activity Programs and Facilities by Zone for Schedule A

	Zone 1 Wetland Viewing Area	Zone 3 Hinsdale Interp. Center	Zone 6 Hinsdale Slough Trail	Zone 7 East End Ranch	Area Outside Zones
Type of Media					
Information Board		X		X	
Interpretive Signs	X	X		X	
Brochure Rack	X	X		X	
Brochure	X				
Information Orientation Area		X		X	
Interactive Exhibits	X	X		X	
Type of Activity Program					
Live Interpretive Program	X	X	X	X	
Guided Walks			X	X	X
Educational Activities	X	X	X	X	X
Group Assembly	X	X	X	X	

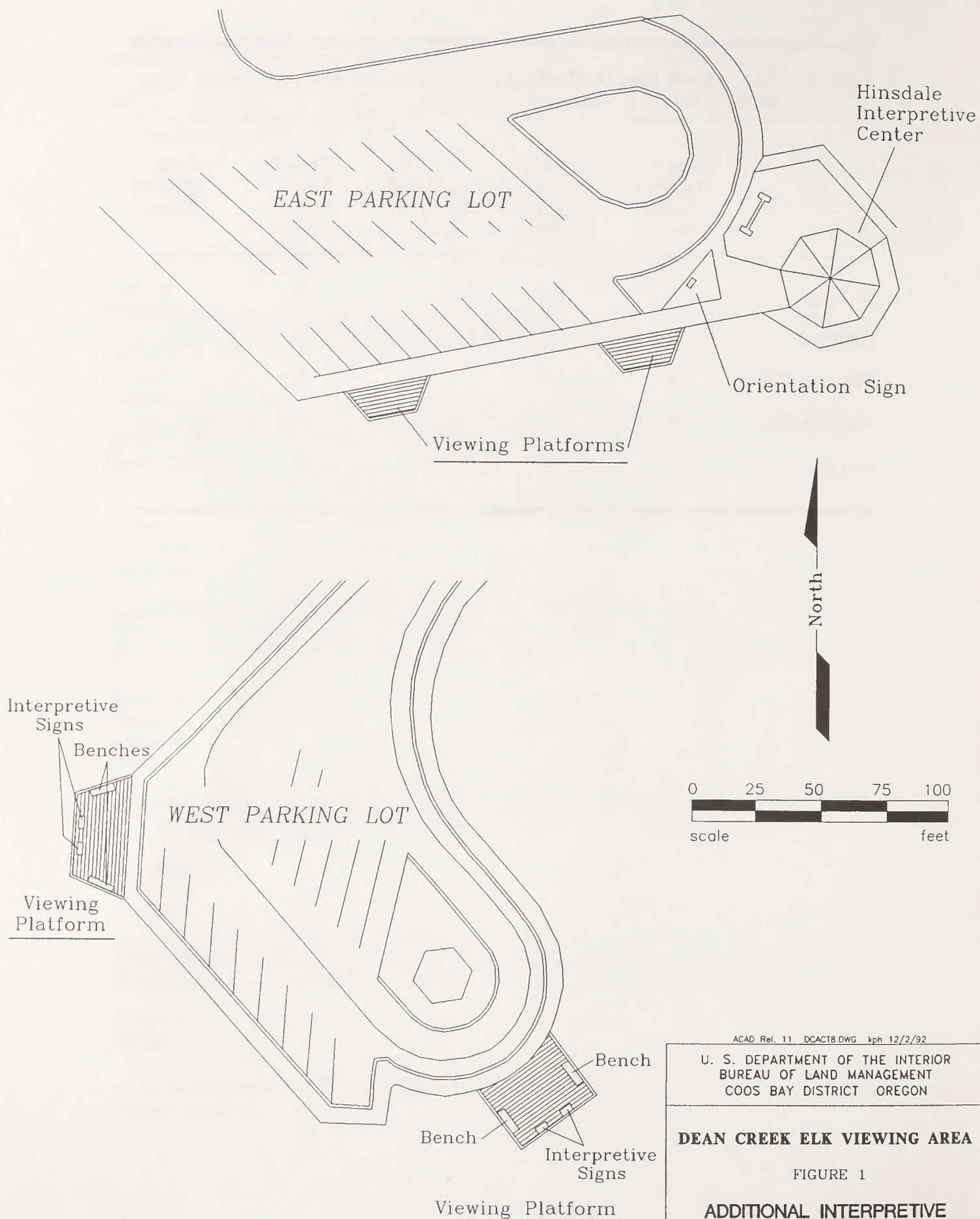
Table 3. Appropriate Uses of Media, Activity Programs and Facilities by Zone for Schedule A (Continued)

	Zone 1 Wetland Viewing Area	Zone 3 Hinsdale Interp. Center	Zone 6 Hinsdale Slough Trail	Zone 7 East End Ranch	Area Outside Zones
Type of Facilities					
Office & Contact Station				X	
Field Research Station				X	
Onsite Caretaker Residence				X	
Educational Staging Area				X	
Books & Nature Material Sales		X ¹		X	
Meeting Center				X	
Overnight Use Facility				X	
Viewing Scopes	X	X			
Surface Trails			X		

¹ Mobile bookstore

Table 3. Appropriate Uses of Media, Activity Programs and Facilities by Zone for Schedule A (Continued)

	Zone 1 Wetland Viewing Area	Zone 3 Hinsdale Interp. Center	Zone 6 Hinsdale Slough Trail	Zone 7 East End Ranch	Area Outside Zones
Parking	X	X		X	
Restrooms	X	X		X	
Drinking Water	X	X		X	
Viewing Deck	X	X			
Bench	X	X	X	X	



***Zone 3 - Hinsdale
Interpretive Center
(Actions 5.6-5.15)***

The Hinsdale Interpretive Center will continue to be a key site for visitors, with an important role in introducing wildlife viewing opportunities and themes regarding elk and other inhabitants of Dean Creek EVA. The Center will be available for all-weather viewing, and will provide an assembly site for live presentations, interpretive panels, interactive exhibits and audio media.

Action 5.6 - Design and install two additional interpretive panels. Topics for the panels include: elk nutrition and energy budget, predators, pasture management and identification of other wildlife.

Action 5.7 - Design and install interactive displays.

Action 5.8 - Design and distribute an interpretive brochure on the Dean Creek EVA to be updated every two years.

Action 5.9 - Design and present live presentations at scheduled times at the Center.

Action 5.10 - Design and install an orientation panel. The sign will include regional information and a map of the Dean Creek EVA. One orientation display should be developed to address the question: "Where are the elk?" This display, placed at key viewing sites, should facilitate showing the changing locations of the herd. It could also provide a place for listing of other wildlife sightings and the dates of their observation. This exhibit will serve a dual purpose of orienting visitors to restrooms, water, visitor information, trails and other viewing areas. In addition, a side panel could help people locate other area attractions or services.

Action 5.11 - Develop an audio interpretation program for the Dean Creek EVA. A short-range, loop-system radio broadcast will provide information to sight-impaired or hearing-impaired visitors.

Action 5.12 - Install short-range radio system.

Action 5.13 - Design and construct two viewing decks on the southern side of the parking area (Figure 1). Viewing decks will provide an area away from the sidewalks for visitors to view the wildlife.

Action 5.14 - Install viewing scopes at the Viewing Area and along the Frontage Road. Two types of viewing scopes will be installed; one will be accessible to children and physically handicapped people, and the other will be designed for standing viewers.

**Zone 6 - East Viewing
Area (Action 5.16)**

Action 5.15 - Design and construct a water system for the west end, including the installation of drinking fountains.

The East Viewing Area will alleviate visitor use of the highway shoulder to view elk in the east pasture, and allow visitors to park and explore parts of Dean Creek EVA on a well-defined trail to the Hinsdale Slough. Visitors will also be able to access a Visitor Contact Area planned at the existing house.

Action 5.16 - Conduct guided walks along the east end right-of-way. The groups will walk from the ranch to the Hinsdale Slough on the north side of the existing right-of-way fence. The fence will provide a physical barrier between the groups and the pasture.

**Zone 7 - East-End
Ranch
(Actions 5.17 - 5.30)**

Because it is a key for visitor use in this activity plan, the East-End Ranch will be discussed in detail. The ranch will be a focal point—a Visitor Contact Center—for visitors seeking additional information, book sales, and support services. The East Viewing Area will allow safe access to the Visitor Contact Center and educational facilities, where fully accessible parking, passenger loading and unloading areas, water and restrooms will be available.

Development for visitor use has been separated into two parts: Schedule A and Schedule B, with Schedule A covering short-term needs and Schedule B being for the long term. Schedule A utilizes present land base and facilities (Map 7), given reliance on our current knowledge base and monitoring information for wildlife populations/habitats and visitor use. Schedule A will be effective only until further monitoring, feasibility evaluations, and visitor use evaluations can be acquired.

Schedule B is a long-range vision for facilities and visitor use programs. Actions under Schedule B need to be implemented during the same time period that Schedule A is actively functioning. The interim period will allow time to acquire needed staffing and to develop designs for effective environmental education and interpretive programs.

Schedule A

House:

The function of the house is dependent on the evaluation survey and cost-estimate analysis. If the cost of its renovation for public use is too high, the house will be used on an interim basis as office/storage space and as a place for small group meetings.

UAPOUA RIVER

BRIDGE

EXISTING HOUSE

EXIST. GARAGE AS TEMPORARY STAGING AREA

EXIST. HOUSE TRAILER

HORSE BARN & MILK PARLOR REMOVED

EXISTING GLEBE

ALTERED LOCATION

COURTY ROAD

NOTE:
SPECIFIC LOCATION OF BUILDINGS IS APPROXIMATE. SITE MAP PROVIDED DID NOT SHOW THE BUILDINGS IN THEIR TRUE LOCATION OR SCALE.

MAP 7

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

THE RANCH
DEAN CREEK VIEWING AREA

DESIGNED	E. J. Toland	DR-241
REVIEWED		
APPROVED		
DRAWN	6/4/72	SCALE 1"=60.0'
DATE	8/4/72	SHEET 1 OF 1
DRAWING NO.		

ALWAYS THINK SAFETY

The preferred alternative is to use the house as a multiple-use facility for visitor contact, staff management and an overnight environmental education facility (Table 4). The formal living room will function as a bookstore and a visitor contact area, providing a location for the public to talk to staff and to gather information on regional facilities (Figure 2).

Under the preferred alternative, the Visitor Contact Area will have changeable and interactive displays, an information desk and brochures/hand-outs. The bookstore will have several items available for sale, including books, posters, postcards, educational items, posters and items associated with Dean Creek Wildlife Incorporated. Bookstore sale items will have a theme compatible with the overall goals of Dean Creek EVA with emphasis on wildlife viewing and environmental education. Staffing of the bookstore may be done by a volunteer group, with sale proceeds donated to the ongoing management of Dean Creek EVA.

The house will also provide a separate office for the site manager. Another existing building will be used for office space for maintenance and interpretive staff, summer temporaries, volunteers and field researchers (Table 4).

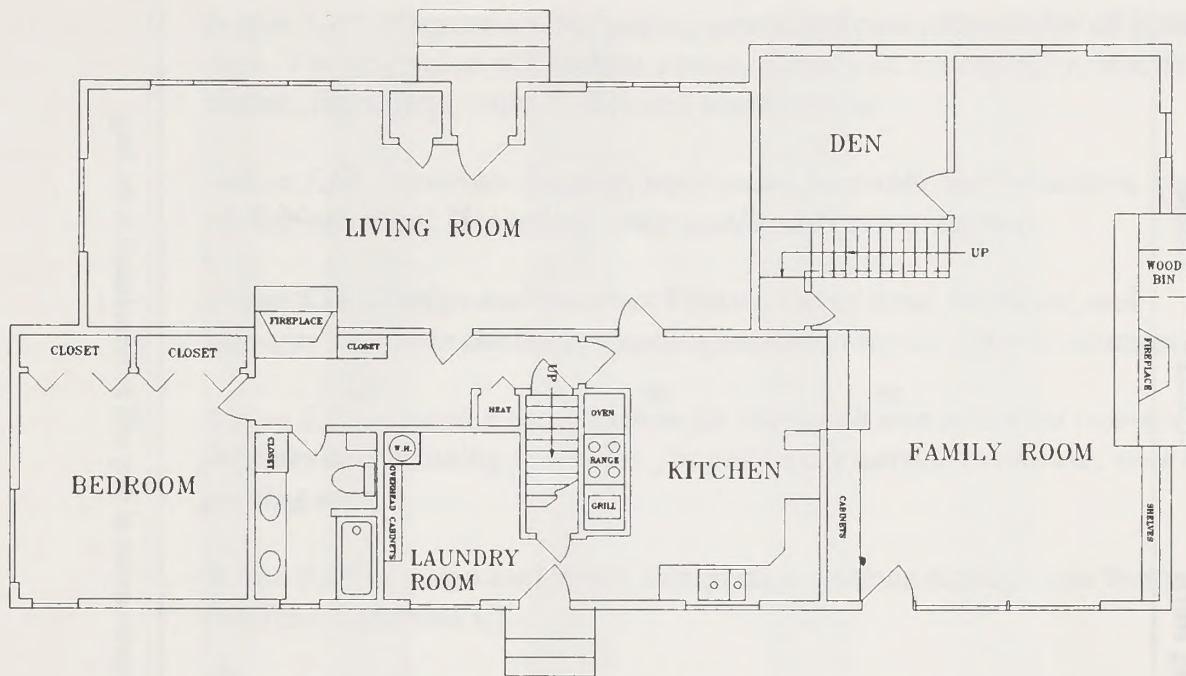
The family room will serve as an area for small group meetings and work space for indoor environmental education activities.

Another use for the house is to provide overnight facilities for small groups. The upstairs will provide sleeping areas with bunk beds for up to 18 people. The kitchen will be furnished with utensils and cookware, with the groups providing their own meals and clean up. The kitchen will also be available for use by small meeting groups and the staff.

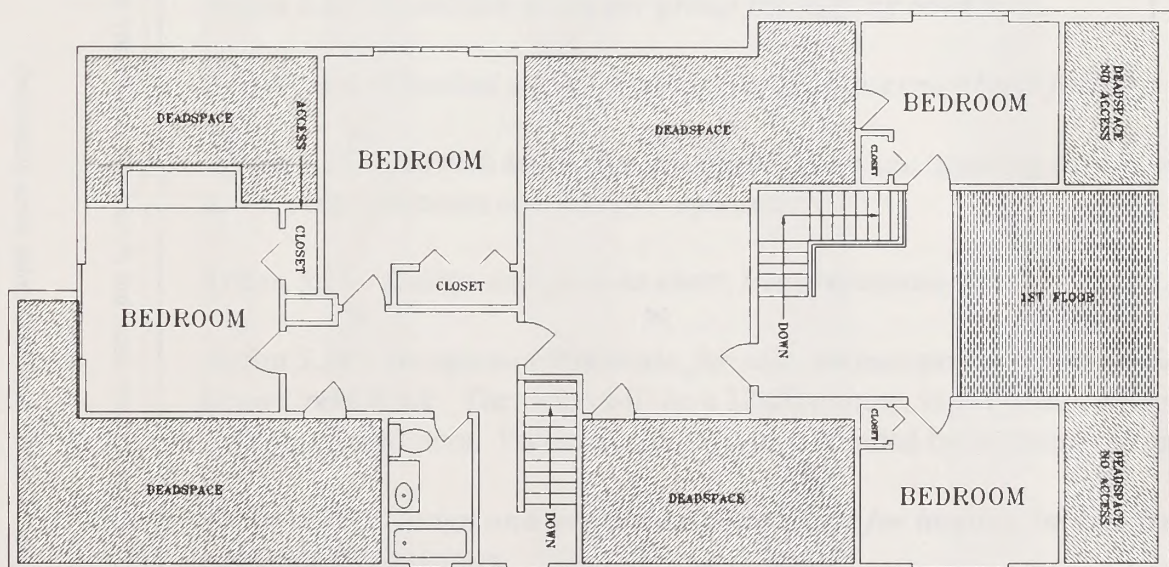
Several other alternatives for the house were considered but deleted from further review. Those alternatives included: full-time caretaker's residence, temporary housing for employees, Dean Creek EVA management housing, demolition, onsite office, museum, agency field meeting station and a bed and breakfast facility. Consideration was also given to selling the land the buildings are on, or renting the house on the open market.

Other Buildings:

Under Schedule A, other buildings at the ranch will have various uses, including storage, staging areas for environmental education and office space (Table 4).



1ST FLOOR



2ND FLOOR

OUTLINE.DWG ACAD 11.0 DPR 3/8/93

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COOS BAY DISTRICT OREGON

DEAN CREEK ELK VIEWING AREA

FIGURE 2

FLOOR PLAN
RANCH HOUSE

Table 4. East-End Ranch Buildings and Their Corresponding Uses During Schedule A ¹

Use	Trailer	Garage	Equipment Shed	Wooden Barn & Milking Barn	Arena	House
Caretaker Site ²	Pending Analysis					
Manager's Office						X
Maintenance Office				X		
Non-maint. Office	Pending Analysis					X
Storage for Equipment and Supplies		X	X		X	
Elk Handling Facility					X	
Visitor Contact Area						X
Staging Area for Envir. Education		X	X		X	
Overnight Use						X
Demolish	X		X	X		

¹ Buildings to be demolished have short-term uses, but should not receive any substantial improvements as they will be demolished in the long term.

² Option 1 - BLM supplies pad; caretaker provides trailer (non-volunteer).
Option 2 - BLM supplies pad and trailer for a volunteer.

Action 5.17 - Prepare an evaluation survey and cost estimate for all buildings. The evaluation will include structural analysis, accessibility, electrical system, fire safety, water quality and sewer system.

Action 5.18 - Renovate house to meet codes for public use (structure, accessibility, electrical, fire safety, water quality and sewer system).

Action 5.19 - Design and construct Visitor Contact Area, bookstore, and manager's office in the house (pending evaluation survey and cost estimates).

Action 5.20 - Install a water system for the ranch and construct restroom facilities and drinking fountains for public use outside the house, near the parking area.

Action 5.21 - Design and install interpretive outdoor displays (see Interpretive Plan, Appendix C).

Action 5.22 - Design and install interpretive displays for the Visitor Contact Area (see Interpretive Plan, Appendix C).

Action 5.23 - Establish volunteer group for staffing bookstore.

Action 5.24 - Conduct survey to assess need for overnight-use facility.

Action 5.25 - Furnish house for overnight group use (pending evaluation survey, cost estimates and survey responses).

Action 5.26 - Design and present short, live presentations.

Action 5.27 - Design and distribute, for sale, an interpretive video on the Dean Creek EVA. The video will be a 12-20 minute, high quality, commercially-produced item. Production costs will be funded by an interested group.

Action 5.28 - Design and install audio broadcast for hearing-impaired and sight-impaired visitors.

Action 5.29 - Demolish the equipment shed, house trailer, milking parlor and old barn (Table 4).

Schedule B

Action 5.30 - Design and construct an environmental education center. Facilities will be designed for half-day use by school groups. The building

will have a rustic appearance and be designed for low maintenance with concrete floors and wooden benches. To complement the building's rustic appearance, there will be a large wood stove to provide some heating. The building will also have electricity, with electric heat to all rooms.

The staging site is an area or facility where onsite staff, educators and chaperons can organize groups into smaller clusters to facilitate teaching and prepare the students for their field experience. The indoor staging area will be designed for a seating capacity of 50, and will contain wooden benches for group presentations, as well as a work area with tables and space for displaying exhibits. An area near the doors will accommodate students in putting on their rain gear, boots, or other field clothing. The staging area will provide a view of the pasture, except when window shutters are used during slide shows. Students should be able to move directly from the staging area to trails or study sites without being distracted or traveling great distances. A small kitchen will be available for preparing hot drinks and snacks, and a first aid station will be nearby. Storage rooms will be situated along the periphery to provide easy access to interpretive materials, and office space will be available for interpretive specialists and other personnel.

Restroom facilities with a flush system will be designed to facilitate groups of 50. Drinking water will be available. The parking area will be designed to accommodate environmental education groups.

The Dean Creek EVA provides outstanding educational opportunities as a day use site for students to learn about elk and other wildlife. It also has the potential to provide limited overnight use.

Initially, under Schedule A, existing facilities at the East-End Ranch (or an open-air site in good weather) will be used as a staging area for school groups visiting the site. The staging area should be away from other visitor uses, but near restrooms. In Schedule B, which is the long-term, the staging facility will be in the Environmental Education Center.

A pre-site packet will be mailed to teachers in advance of the visit. The packet will include a site map; directions to parking and staging areas; and an overview of Dean Creek EVA and its management, use, and natural history, along with a suggested list of educational activities students can use before, during and after their visit.

Action 5.31 - Develop curriculum. A partnership agreement with area schools may help establish the basis for curriculum needs. Through an in-service workshop, teachers could provide ideas for a pre-site visit package,

*All Zones - Educational
Use and Facility Needs
(Actions 5.31 -5.34)*

including a range of suggested activities. Teachers could also volunteer to assist with onsite activities and post-site follow-ups. Activity plans and curriculum could be designed and established according to different age groups and varying visit lengths.

Action 5.32 - Develop pre-site packets for students. Dean Creek EVA discovery kits will be developed at a low cost to be distributed and explained to the students before their arrival at the site. The kits could include a magnifying glass, sampling bag, small guide book illustrating elk signs and behaviors, species list, site journal and a few activity sheets such as word puzzles or drawing paper.

A pre-site activity might focus on having students “build an elk,” relying upon their knowledge of elk before their site visit. Pre-site classroom curriculum might also include a video on elk behavior and background on North American elk and their relatives.

Action 5.33 - Develop an onsite educational program. Upon their arrival, students will have an opportunity to use restrooms, and put on rain gear and boots before starting their visit. A BLM interpreter or educational guide will meet students at the staging area to orient the students by explaining the field manners expected of them, and outlining the activities planned for their enjoyment and learning experience. The guided visit may include investigative activities, such as keeping a wildlife viewing journal while onsite (using waterproof paper) or other activities to be done in smaller groups or individually.

Action 5.34 - Prepare post-site packets. After visiting the site, the teachers may want to do a follow-up activity in the classroom to reinforce the onsite learning experience. The post-site packet might involve using information students collected during the field activities.



Onsite administration, use supervision, monitoring and research are management responsibilities that must be addressed. For example, a variety of options can be considered for staffing the site: permanent and part-time agency personnel, jointly-funded personnel, cooperative management agreements, volunteers and private sector or concessionaire involvement. These options need consideration in developing the plan. There may also be a need for special regulations and policies to achieve management goals and objectives.

Another need is research which is vital to expanding our knowledge and data about wildlife populations/habitats and visitor use management at the Dean Creek EVA, and to increase our understanding of the interaction between people and nature. Methods and timelines used to monitor wildlife and use of their associated habitat will provide a record of management's effects on the area. Effective monitoring will ensure that the management is proceeding in the desired way.

Questions specific to Issue 6 are: What level and kind of staffing will be required to effectively administer the Dean Creek EVA operations and services? How will this staffing be achieved? What regulations should be established, and how will these be implemented?

Goals

1. Provide adequate staffing at the Dean Creek EVA to accomplish the plan's goals and objectives for wildlife, habitat, and visitor use, as well as maintenance and upkeep.
2. Provide an integrated monitoring program and adequate staffing to implement the monitoring methods.
3. Implement research studies that emphasize enhancement of management techniques at the Dean Creek EVA and increase the understanding of natural resources in general.

Objectives

1. Implement a monitoring program that covers all elements at the Dean Creek EVA (wildlife populations/habitats and visitor use), and that is capable of measuring the plan's effectiveness in reaching its goals and objectives, while being sensitive enough to alert managers of any resource degradation occurring from the plan's actions.
2. Support sound research programs through administration, and whenever possible, provide support services and equipment.

(Actions 6.1 - 6.12)

Action 6.1 - Create an administrative office at the East-End Ranch. Onsite administration is needed for the success of this program, because the public is accustomed to high-quality sites having uniformed employees onsite for interpretation, orientation and facility maintenance. Agency personnel onsite also adds a sense of familiarity to the site. At Dean Creek EVA, having onsite personnel is particularly important because this site not only provides a high-quality wildlife viewing experience, but due to its location, has a very strong likelihood of hosting large numbers of visitors.

Onsite agency personnel are needed for visitor monitoring, emergency assistance, and assurance that visitors are not trespassing into the pastures. Uniformed employees will be the primary enforcers of the area's rules. The staff will work with the BLM Ranger and the Douglas County Law Enforcement when additional enforcement is needed.

Action 6.2 - Establish a caretaker role and onsite living arrangements at the ranch on a year-round basis. Having onsite presence is critical for protection against vandalism and misconduct in the area, especially at night. Another advantage is the immediate care an onsite caretaker can render in the case of facility breakdowns or administrative problems.

Several options are possible to accommodate the role of the caretaker and the location of their dwelling. The caretaker position could be either a volunteer, service contractor, or an agency employee. A trailer pad with hook-ups will be constructed, possibly in the area where the old barn is located. The BLM could provide a furnished trailer for volunteers, or the caretaker could elect to provide their own personal trailer. The BLM can legally furnish housing for volunteers, but not for employees or service contracts. The BLM will provide water and electricity for the caretaker.

The duties of the caretaker will include providing week-end patrols, and serving as the Dean Creek EVA contact person during after-hours and in emergencies.

Action 6.3 - Establish a complete team of employees to fully manage Dean Creek EVA. The need is identified for four full-time positions and seven seasonal positions, as follows:

Full-time positions:

- Onsite manager (1)
- Maintenance workers (2)
- Interpretive specialist (1)

Seasonal positions:

- Maintenance technicians (2)
- Interpreters (2)
- Public contact representative (1)
- Wildlife biologists (2)

The high visibility of Dean Creek EVA dictates that we provide a high-quality, well-maintained area for visitors. Moreover, to maintain the quality of the site, emphasis must be placed on preventive maintenance, involving both maintenance and resource staff. This will require budgeting workmonths

for recreation maintenance and support services, annual pasture maintenance and improvements, and habitat enhancement and protection.

There is rationale to support each of the 11 positions identified above. The current workload dictates two full-time maintenance people, and there is a legitimate need for the addition of two seasonal maintenance technicians within the next two years.

A full-time position for an interpretive specialist and two seasonal interpreters for Dean Creek EVA are needed for visitor contact, guided and onsite interpretive programs, and the environmental education program. A public contact representative is needed to staff the Visitor Contact Area during the tourist season.

Seasonal wildlife biologists are needed to implement monitoring programs for wildlife and resources at the Dean Creek EVA (refer to Action 6.5).

An onsite manager is needed to coordinate activities, prepare and administer budget and project work loads, and supervise employees assigned to Dean Creek EVA.

Action 6.4 - Organize a volunteer program for assistance in site management and interpretation.

Action 6.5 - Establish wildlife population/habitat monitoring programs. Inventories and base data are needed for many of the resources before monitoring programs can be established. Monitoring results will indicate how this plan and other management activities are affecting the Dean Creek EVA resources.

The following have been identified as monitoring needs:

- Elk population levels.
- Elk productivity and survival rates.
- Elk distribution and movement throughout the area.
- Disease and parasite transmission of elk.
- Pasture species composition and productivity.
- Wetland vegetation composition.
- Use and nesting success of wood ducks in nest boxes.
- Use and species composition of ducks.
- Use rates and species composition of fish.

Action 6.6 - Establish visitor use monitoring programs. Visitor use of Dean Creek EVA facilities is relatively recent and little information is currently available regarding onsite use and its effect on the presence and behavior of

wildlife. Many of these assessments may be made from accurate visual observations and visitor contact onsite. Other monitoring should be coordinated with biologists to measure elk and other wildlife behaviors, numbers and movements. Public response forms can help identify the need for additional services or concerns that visitors may wish to express.

A monitoring program should be implemented to provide:

<u>Item To Monitor</u>	<u>Monitoring Method</u>
Use numbers	Traffic counters Double sampling Visitor counts
Visitor flow onsite	Visual observations
Traffic flow and safety in viewing areas and on highway	Traffic counters
Effects of viewing areas and human activity on wildlife	Visual observations Elk/wildlife counts & location Correlation
Visitor expectations	Visitor contact Visitor response forms
Program/facility needs and/or maintenance	Visitor contact Visitor response forms

Action 6.7 - Support research activities, within physical and economic constraints, whenever possible. The following research needs have been identified by the planning committee as research that could have direct benefits to the Dean Creek EVA:

- Presence of elk parasites and disease.
- Parasite and disease control for elk.
- Pasture utilization and nutrient content.
- Elk physiology and behavior.
- Snag inventory.
- Seasonal use by shorebirds and waterfowl.
- Fish use of the ditches and sloughs.

Action 6.8 - Establish a cooperative agreement with the Dean Creek Wildlife Incorporated. The agreement will further identify the group's supporting role in project development and allow for active participation in project implementation.

Action 6.9 - Pursue cooperative agreements with environmental education sources to develop an environmental education program.

Action 6.10 - Pursue land acquisition of some adjacent properties to enhance Dean Creek EVA. Acquisition of adjacent properties will be pursued, contingent on having willing sellers, if the property and its resources will enhance the overall manageability and diversity of wildlife, wildlife habitat and visitor use opportunities at the Dean Creek EVA. The Dean Creek EVA comprises approximately 1,040 acres and is bordered by different land owners (Map 2). Coordinated management could enhance the Dean Creek EVA and/or private lands.

Spruce Reach Island—located across from Dean Creek EVA on the northern side of Highway 38—is for sale on the open market, and the BLM is pursuing acquisition of this property. The island's unique Oregon Sitka Spruce stands, wetland communities, and access to the Umpqua River will enhance resource diversity and visitor use opportunities on the southern Oregon coast. Acquisition of the property would provide an opportunity for current and future generation visitors to experience the island's unique habitats. Dean Creek EVA staff could manage this site, but this option has not been factored into the Dean Creek EVA management plan.

Acquisition of adjacent wetlands at Dean Creek EVA could benefit public wildlife management and viewing opportunities. The pristine wetlands at the southeastern end of the area provide habitat for waterfowl and associated species and wildlife viewing opportunities.

Acquisition of adjacent uplands south to the Hakki Ridge road would extend the management scope of the area in providing a diversity of upland wildlife habitats.

Action 6.11 - Enforce public use restrictions. Restrictions include:

- Antler, bone or feather collection by groups or individuals will not be allowed. The basis for this restriction is to maintain low levels of human activity within the EVA. Also, the majority of antlers are shed in the upland forest and are rarely found in the bottomlands.

- The entire area of the Dean Creek EVA is closed to all forms of hunting. Permits for special cases (e.g., research collection and beaver management) will be authorized by ODFW.
- Pets will only be allowed in the public use parking lots, and dogs must be leashed.
- The Dean Creek EVA is closed to overnight use. This regulation will be enforced through the Douglas County Sheriff, Oregon State Police, BLM Ranger, and BLM staff.

While the Dean Creek EVA is officially closed to public access, certain activities may be allowed on a special permit basis within the EVA. Individual requests will be contingent upon analysis by the site manager and authorization of the Area Manager. Individual requests may include photography, video taping, bird watching and civic group projects.

Action 6.12 - Pursue an Administrative Withdrawal of the Dean Creek EVA.

The withdrawal would set aside the Dean Creek EVA for public purposes, and would segregate the area from the operation of some of the public land laws and the mining law. A withdrawal would protect the EVA's substantial investment of federal funds, improvements and facilities, sensitive environmental values, and public health and safety.

**B. Implementation
and Cost
Schedules for
Planning Issues**

The following implementation schedule (Tables 5-10) is a guideline for planning and budget preparation, and may be modified by management as the need arises. Actions discussed under more than one issue are included in the first issue in which it was discussed.

Actions that require workmonths for project implementation would be completed by staff assigned to Dean Creek EVA. Since the projects would not be the only workload requirements of the staff, the workmonths for the actions in the table will not be equal to the workmonths requested.

Table 11 provides a summary of the implementation and cost schedule for all six issues.

Table 5. Implementation and Cost Schedule for Issue 1 Actions - Highway Safety (\$)*

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
1.1 Construct east-end parking lot & access road		600,000				600,000
1.2 Prepare visual screening plan with Hinsdale Slough curve as first priority.		150,000				150,000
1.3 Manage pastures to encourage elk use near safe viewing areas. (See Actions 4.1, 4.2, 4.3, 4.4)						
1.4 Design a highway signing plan.	CE					CE
1.5 Replace/repair the r/w fences. -Replace fence between Koepke & Hinsdale Sloughs. -Replace west-end fence -Annual maintenance	13,650 200	6,750 200	220	250	300	13,650 6,750 1,170
Total	\$13,850	\$756,950	\$220	\$250	\$300	\$771,570

*All actions will be coordinated with ODOT.

WM = Workmonths needed to implement the action.

CE = Cost estimate needed.

Table 6. Implementation and Cost Schedule for Issue 2 Actions - Management of Different Habitats (\$)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
2.1 Manage pastures for elk forage. (See 4.1, 4.2, 4.3, 4.4)						
2.2 Maintain water-control structures.	30	30	50	50	50	210
2.3 Provide increased nesting opportunities.						
-Wood duck boxes	50	50				100
-Goose nesting platforms	50	50				100
-Osprey platforms	500		500			1,000
2.4 Limit disturbance in nesting season.	WM	WM	WM	WM	WM	
2.5 Enhance riparian areas. -Plant riparian species (WM) -Bank tapering	3,000	3,000 3,000	3,000 3,000			9,000 6,000
2.6 Create upland meadow habitat.	4,350		4,350		4,350	13,050
2.7 Retain hardwood component.	WM	WM	WM	WM	WM	
2.8 Maintain existing snag numbers.	WM	WM	WM	WM	WM	
2.9 Manage beaver populations.	WM	WM	WM	WM	WM	
Total	\$7,980	\$6,130	\$10,900	\$50	\$4,400	\$29,460

WM = Workmonths needed to implement the action.

Table 7. Implementation and Cost Schedule for Issue 3 Actions - Elk Herd Size (\$)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
3.1 Trap and transplant excess elk.	15,000	3,800	4,000	4,200	4,500	31,500
3.2 Allow natural course with a sick or injured animal.	0	0	0	0	0	0
Total	\$15,000	\$3,800	\$4,000	\$4,200	\$4,500	\$31,500

Table 8. Implementation and Cost Schedule for Issue 4 Actions - Pasture Management (\$)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
4.1 Conduct pasture management. -Forage conditioning (cattle) -Mechanical forage removal -Fertilization	WM 2,000 4,400	WM 2,000 4,650	WM 2,500 5,000	WM 2,500 5,250	WM 3,000 5,500	12,000 24,800
4.2 Renovate pastures (20 acres). -Equipment purchase -Working capital fund -Miscellaneous	11,200 6,700 3,500 500	11,775 9,300 3,675 500	12,500 14,600 3,850 750	13,000 6,400 4,050 750	13,700 0 4,250 1,000	62,175 37,000 19,325 3,500
4.3 Conduct prescribed burning.	3,800	4,000	4,200	4,400	4,620	21,020
4.4 Maintain drainage ditches. Maintain sloughs.	2,000	2,100	2,500 6,000	2,500	2,750 6,000	11,850 12,000
Total	\$34,100	\$38,000	\$51,900	\$38,850	\$40,820	\$203,670

WM = Workmonths needed to implement the action.

Table 9. Implementation and Cost Schedule for Issue 5 Actions - Public Use and Facilities (\$)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
<u>Zone 1 - Wetland Viewing Area</u>						
5.1 Design/construct viewing decks.	12,000					12,000
5.2 Design/distribute brochure.			8,000			8,000
5.3 Design/present live presentations.		WM	WM	WM	WM	
5.4 Design/install interpretive and interactive displays.		5,000				5,000
5.5 Install viewing scopes.	2,000					2,000
<u>Zone 3 - Hinsdale Interpretive Center</u>						
5.6 Design/install two interpretive panels.			6,000			6,000
5.7 Design/install interactive displays.		5,000				5,000
5.8 Design/distribute interpretive brochure.		8,000		9,000		17,000
5.9 Design/present presentations.	WM	WM	WM	WM	WM	
5.10 Design/install orientation panel.	9,000					9,000
5.11 Develop audio interpretation.			3,000			3,000

WM = Workmonths needed to implement the action.

Table 9. Implementation and Cost Schedule for Issue 5 Actions - Public Use and Facilities (\$) (continued)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
5.12 Install short range radio system.				3,000		3,000
5.13 Design/construct two viewing decks.	12,000					12,000
5.14 Install viewing scopes.		2,000				2,000
5.15 Design/construct water system for west end.			6,000			6,000
<u>Zone 6 - East Viewing Area</u>						
5.16 Conduct guided walks to the Hinsdale Slough	WM	WM	WM	WM	WM	
<u>Schedule A: Zone 7 - East End Ranch</u>						
5.17 Prepare evaluation and cost estimate for all buildings.	WM					
5.18 Renovate house to meet codes.						Pending analysis.
5.19 Design/construct Visitor Contact Area, bookstore and office.						Pending analysis.
5.20 Install water system/restroom/ water fountains		150,000				150,000

WM = Workmonths needed to implement the action.

Table 9. Implementation and Cost Schedule for Issue 5 Actions - Public Use and Facilities (\$) (continued)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
5.21 Design/install outdoor display.			25,000			25,000
5.22 Design/install indoor displays.			5,000			5,000
5.23 Establish volunteer group for bookstore.			WM	WM	WM	
5.24 Conduct overnight-use survey.						
5.25 Furnish house for overnight accommodations.					10,000	10,000
5.26 Design/present presentations.				WM	WM	
5.27 Design/distribute video.					WM	
5.28 Design/install audio broadcast loop.				3,000		3,000
5.29 Demolish buildings.	WM					
<u>Schedule B: Zone 7 - East End Ranch</u>						
5.30 Design/construct environmental education center (long term).						
<u>All Zones - Educational Use and Facility Needs</u>						
5.31 Curriculum development.		WM	WM	WM	WM	
5.32 Pre-site packets.		2,500	2,750	3,000	3,250	11,500
5.33 Onsite educational programs.		WM	WM	WM	WM	
5.34 Post-site packets.		2,500	2,750	3,000	3,250	11,500
Total	\$35,000	\$175,000	\$47,500	\$32,000	\$16,500	\$306,000

WM = Workmonths needed to implement the action.

Table 10. Implementation and Cost Schedule for Issue 6 Actions - Area Administration, Use Supervision, Monitoring, and Research (\$)

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
6.1 Create/maintain admin. office.	10,000	1,000	1,250	1,500	1,750	15,500
6.2 Establish caretaker role and living arrangements onsite.	25,000	5,000	5,000	5,000	7,000	47,000
6.3 Staffing -Full Time -Seasonal	30 WM 10 WM	30 WM 15 WM	40 WM 20 WM	40 WM 30 WM	40 WM 30 WM	180 WM 105 WM
6.4 Organize volunteer program. - Coordination - Volunteer substitute	WM 2,400	WM 2,400	WM 2,500	WM 2,750	WM 3,000	13,050
6.5 Monitor wildlife/resources.	500	500	1,000	1,000	1,000	4,000
6.6 Monitor visitor use.	500	500	1,000	1,000	1,000	4,000
6.7 Support research activities.	20,000		23,000		25,500	68,500
6.8 Establish cooperative agreement with Dean Creek Wildlife Inc.	0	0	0	0	0	0
6.9 Cooperative agreements. (other groups)	0	0	0	0	0	0
6.10 Land acquisitions (if sellers willing)						Pending
6.11 Enforce public use restrictions.	WM	WM	WM	WM	WM	
6.12 Pursue administrative withdrawal.	WM					
Total	\$58,400	\$9,400	\$33,750	\$11,250	\$39,250	\$152,050

WM = Workmonths needed to implement the action.

Table 11. Summary of Implementation and Cost Schedule for All Issues (\$) ¹

Actions	Year 1 Cost	Year 2 Cost	Year 3 Cost	Year 4 Cost	Year 5 Cost	Total Cost
1 - Highway Safety	13,850	756,950	220	250	300	771,570
2 - Management of Different Habitats	7,980	6,130	10,900	50	4,400	29,460
3 - Elk Herd Size	15,000	3,800	4,000	4,200	4,500	31,500
4 - Pasture Management	34,100	38,000	51,900	38,850	40,820	203,670
5 - Public Use & Facilities	35,000	175,000	47,500	32,000	16,500	306,000
6 - Area Administration, Use Supervision, Monitoring, and Research	58,400	9,400	33,750	11,250	39,250	152,050
Total	\$164,330	\$989,280	\$148,270	\$86,600	\$105,770	\$1,494,250

¹ This implementation summary and cost schedule only reflects projects for which costs have been established. There will be additional costs for actions awaiting cost estimates (CEs). See Tables 5-10.

Appendix A

List of Planning Participants

Oregon State Office, Bureau of Land Management

Mark Buckner	Supervisory Forest Resource Specialist
David Carpenter	Charles Hagedorn
Melvin Clark	District Manager
Mary Lee Doolittle	Supervisory Resource Specialist
Larry Farnham	Natural Resource Specialist
Robert Foley	Supervisory Forester
Lloyd Fife	Forest Geologist
Craig Gorman	District Soil Scientist
Dennis Graham	Civil Engineering Technician
Thom Green	Forest Specialist
Kate Hamilton	Cartographic Technician
Kathleen Hale	Technical Publications Writer/Editor
Lille Hilde	Supervisory Operations Specialist
Alan Hoffmann	Public Affairs Specialist
Kerrie Kitz	Wildlife Habitat Management and Investigation
	George Kutzner, Area
Larry Mangin	Charles W. Miller, Soil and
Jon Menden	Unsupervised
Steven Morris	Environmental Protection Specialist
Gary Overman	Assistant District Manager
John Paine	Forest Management Specialist, Unsupervised Area
Donald Parker	Supervisory Civil Engineer
Terry Richards	Area Manager, Unsupervised Area
Steve Richardson	District Biologist
Reginald Patten	Historic Archaeologist
Karen Smith	Forest Biologist, Unsupervised Area
Timothy Votaw	Administrative Officer

Oregon State Office, Bureau of Land Management

Chad Brown	State Program Leader - Range Resources
Erick Campbell	State Program Leader - Wildlife
Ken White	State Program Leader - Recreation

The following people reviewed sections of the Dean Creek EVA Activity Plan and many participated in the planning efforts.

Coos Bay District, Bureau of Land Management

Mark Buckbee	Supervisory Natural Resource Specialist
Daniel Carpenter	District Hydrologist
Melvin Chase	District Manager
Mary Lee Douthit	Supervisory Resources Specialist
Lance Finnegan	Natural Resource Specialist
Robert Foisy	Supervisory Forester
Lloyd Fritz	District Geologist
Craig Garland	District Soil Scientist
Dennis Graham	Civil Engineering Technician
Thom Green	Realty Specialist
Kate Hamilton	Cartographic Technician
Kathleen Helm	Technical Publications Writer-Editor
Lillie Hikida	Supervisory Operations Specialist
Alan Hoffmeister	Public Affairs Specialist
Kevin Kritz	Wildlife Biologist (Threatened and Endangered), Umpqua Resource Area
Larry Mangan	District Wildlife Biologist
Jon Menten	Umpqua Forester
Steven Morris	Environmental Protection Specialist
Cary Osterhaus	Associate District Manager
Scott Poore	Fuels Management Specialist, Umpqua Resource Area
Donald Porier	Supervisory Civil Engineer
Terry Richards	Area Manager, Umpqua Resource Area
Bruce Rittenhouse	District Botanist
Reginald Pullen	District Archeologist
Karen Smith	Fishery Biologist, Umpqua Resource Area
Timothy Votaw	Administrative Officer

Oregon State Office, Bureau of Land Management

Chad Bacon	State Program Leader - Range Resources
Erick Campbell	State Program Leader - Wildlife
Ken White	State Program Leader - Recreation

Oregon Department of Fish and Wildlife

Ron Anglin	Assistant Biologist, Umpqua Fish District
Derald Walker	Southwest Regional Supervisor
Bill Hall	Regional Habitat Biologist
Steve Denney	Assistant Regional Supervisor - Wildlife
Chris Wheaton	Staff Biologist - Big Game
Dan Carleson	Staff Biologist - Habitat
Al Polenz	(Past) Assistant Regional Supervisor - Wildlife

Dean Creek Wildlife Incorporated

Michael DuVal, President
Kathy Dobson, Vice President
Sheri Elliot, Secretary
Louis Lorenz, Treasurer
Steve Miller, Legal Counsel
Dave Abel
Don Bower
Carlene Compton
Kathy Crocker
Jim Deardorff
Linda Deardorff
Jeanne Fagnan
Colleen Haggerty
Jackie Slatky
John Smart
Carlin Williams

Other Participants

Ray Cranston, Oregon Department of Transportation
John Nagel, Ducks Unlimited
Doug Ramey, Landowner
Earl Sykes, Editor of Reedsport Courier
Emily Toby, Oregon Division of Land Conservation and Development

Appendix B

Statement of Agreement Between the Bureau of Land Management and Oregon Department of Fish and Wildlife

6525 (932)

APR 29 1988

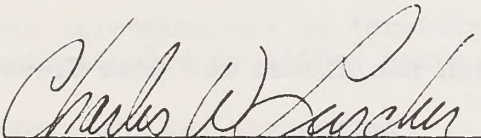
Melvin E. Chase
District Manager
Coos Bay District
Bureau of Land Management

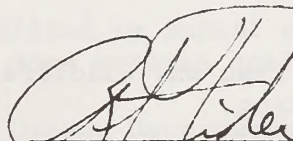
James L. Fessler
Regional Supervisor
Southwest Region
Oregon Department of Fish & Wildlife

An updated agreement between our two agencies for the management of the Dean Creek Elk Viewing Area has been completed. A copy is enclosed for your use.

The new agreement recognizes current realities and funding limitations. It also provides for better coordination recognizing the Bureau's multiple use management mandate and the Department's wildlife management mission.

The Dean Creek Elk Viewing Area is a cooperative management site. Both agencies are committed to furthering the elk viewing and recreational attributes of this unique site for the benefit of society. Let us now move forward together in developing and managing the Dean Creek Elk Viewing Area.


Charles W. Luscher
State Director
Bureau of Land Management


Randy Fisher
Director
Oregon Department of Fish & Wildlife

Enclosure

DEAN CREEK ELK VIEWING AREA AGREEMENT

between

United States Department of Interior,

Bureau of Land Management

and

Oregon Department of Fish and Wildlife

WHEREAS, this Agreement is in accordance with the Memorandum of Understanding between the Oregon Department of Fish and Wildlife, hereafter referred to as the Department, and the Bureau of Land Management, hereafter referred to as the Bureau, dated November 1, 1976, and the supplement to that memorandum dated March 18, 1985 titled "Implementation of the Sikes Act, That Provides For Entering Into Supplemental Agreements For Cooperative Management On Specific Bureau Administered Lands."

WHEREAS, this Agreement addresses management of the Dean Creek Elk Viewing Area located approximately three miles east of Reedsport adjacent to and south of Highway 38 in Douglas County, Oregon [that was] acquired by the Bureau in January 1987 through a land exchange.

WHEREAS, both the Department and the Bureau desire that the Dean Creek Elk Viewing Area be managed as a wildlife area with emphasis on the recreational aspects of elk viewing.

WHEREAS, the Department has management authority for the wildlife species including their population levels.

WHEREAS, the Bureau has jurisdiction over the use of the lands and other inherent resources of those lands, including wildlife habitat management, and is a [multiple use agency] responsible for promoting multiple-resource management.

WHEREAS, the Oregon Fish and Wildlife Commission has closed the Dean Creek Elk Viewing Area to hunting.

THEREFORE, the Department and the Bureau determine this Agreement to be mutually advantageous to identify functional roles, areas of responsibility and general working relationships in providing for the wildlife habitat and recreation at the Dean Creek Elk Viewing Area. This Agreement replaces previous signed agreements between the two agencies regarding the Dean Creek Elk Viewing Area.

ODFW AGREES:

1. To recommend continued hunting closure on the Dean Creek Elk Viewing Area since hunting is viewed as incompatible with elk viewing. The parties recognize the Oregon Fish and Wildlife Commission has final authority to change state hunting [seasons and] regulations.

2. To review, upon request by BLM, habitat improvement projects, signs and interpretive displays and other written material prepared by the Bureau.
3. To transplant surplus elk from the Dean Creek Elk Viewing Area when appropriate and to work with BLM on first consideration for receiving transplanted elk.
4. To address elk damage on adjacent private lands as per the Department damage policy and procedures.

BLM AGREES:

1. To manage and maintain wildlife habitat, public facilities and roads to provide a safe viewing opportunity on the Dean Creek Elk Viewing Area.
2. To provide a wide array of habitat opportunities and projects for other wildlife species such as furbearers, waterfowl, raptors, various non-game species and fish while emphasizing elk.
3. To provide sites for surplus elk from the Dean Creek Elk Viewing Area and receive first consideration for receiving surplus elk from the area.

BLM AND ODFW MUTUALLY AGREE:

1. To set elk population numbers for the Dean Creek Elk Viewing Area. Should elk numbers exceed the agreed-upon level, they will be moved through trapping and transplanting. Population control by hunting on the uplands is a last resort.
2. Activities at Dean Creek Elk Viewing Area shall be reviewed at the annual meeting of BLM's Coos Bay District and ODFW's Southwest Region.

It is agreed that funds to implement activities on Dean Creek Elk Viewing Area are contingent upon availability of funds within the two agencies.

This agreement may be terminated or modified by mutual consent of the parties or terminated by either party after 30 days written notice.

Bureau of Land Management

Oregon Department of Fish and Wildlife

By /s/ CHARLES W. LUSCHER

By /s/ Randy Fisher

Title _____

Title _____

Date _____

Date _____

Appendix C

Interpretive Plan and Media Description for Dean Creek Elk Viewing Area

Dean Creek is a tributary of the Snake River and is located in the Snake River Canyon. The creek is a popular destination for visitors to the area, and the viewing area is a key feature of the site. The viewing area is located on the north bank of the creek, and it provides a good view of the creek and the surrounding landscape. The viewing area is a key feature of the site, and it is a popular destination for visitors to the area. The viewing area is located on the north bank of the creek, and it provides a good view of the creek and the surrounding landscape. The viewing area is a key feature of the site, and it is a popular destination for visitors to the area.

The viewing area is a key feature of the site, and it is a popular destination for visitors to the area. The viewing area is located on the north bank of the creek, and it provides a good view of the creek and the surrounding landscape. The viewing area is a key feature of the site, and it is a popular destination for visitors to the area.

Interpretive Plan

1. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
2. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
3. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
4. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
5. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
6. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
7. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
8. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.

Media Description

1. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
2. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
3. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
4. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
5. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
6. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
7. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.
8. Visitors will learn the history of the Dean Creek area, and the importance of the viewing area.

Purpose and Overview of Plan

The purpose of this appendix is to provide a framework within the Dean Creek Elk Viewing Area Activity Plan for the development of interpretive programs and printed materials that will strive to achieve the specific goals and meet the objectives outlined in the planning process.

Identified in the interpretive plan are visitor-intended outcomes, resource inventory, relevant topics, central themes and interpretive applications by visitor zone (1, 3, 6, and 7). Visitor-intended outcomes (VIO) help identify specifics we want visitors to know, feel and do after visiting the Dean Creek EVA. General VIOs—those that are common to the entire area—are listed first, followed by the VIOs for the specific planning zones. Themes are the significant stories that are developed for each site to meet the intended outcomes and guide the construction of interpretive programs, facilities and media.

The plan's most important interpretive goal is to inspire a great appreciation for the world of living things of which we are merely one part, and to encourage people to act responsibly to conserve and maintain that world.

General Visitor Intended Outcomes For All Locations

Knowledge

- ◆ Visitors will know that elk use all of the Dean Creek EVA, and that the area is managed for elk use.
- ◆ Visitors will understand how elk and other wildlife use the area to meet their intrinsic needs.
- ◆ Visitors will know that the different types of habitat at the Dean Creek EVA support many varied wildlife.
- ◆ Visitors will become more aware of the importance of wetland areas and their importance to wildlife, which will motivate them to help conserve this critical habitat.
- ◆ Visitors will become aware that people have used and modified the area for many decades.

Attitudes

- ◆ Visitors will appreciate that other wildlife live at the Dean Creek EVA including songbirds, waterfowl, beaver, bear and other mammals, amphibians and reptiles.

- ◆ Visitors will feel excited and awed to see elk and other wildlife at Dean Creek EVA.
- ◆ Visitors will appreciate the efforts of the BLM, ODFW, and city of Reedsport to provide safe and educational viewing opportunities.
- ◆ Visitors will feel good about their visit, tell their friends about the Dean Creek EVA, and want to return.
- ◆ Visitors will appreciate the great size of Roosevelt elk.
- ◆ Visitors will feel that they have had a learning experience and will want to know more.
- ◆ Visitors will appreciate the complexity of habitat needs of elk and other animals.
- ◆ Visitors will gain respect for wildlife and desire to conserve their habitat.

Behaviors

- ◆ Visitors will spend 30 minutes to 2 hours at the Dean Creek EVA and have a variety of experiences there.
- ◆ Visitors will use signs, brochures, interpretive programs and facilities while visiting the area.
- ◆ Visitors will visit other wildlife viewing areas.
- ◆ Visitors will show respect for closures, regulations, and the safe and considerate use of the area.
- ◆ Visitors will support wildlife needs through positive personal actions.
- ◆ Visitors will make donations to the Dean Creek EVA programs and support the local economy.
- ◆ Visitors will extend their stay and visit other area attractions.
- ◆ Some visitors will want to participate as volunteers at the Dean Creek EVA.

Zone 1 - Wetland Viewing Area

Visitor-Intended Outcomes

- ◆ Visitors will view wildlife in a managed setting and understand how wetland habitat was restored for waterfowl and other wildlife.
- ◆ Visitors will be able to walk out above part of the wetland habitat on a viewing platform and/or barrier-free trail and read interpretive signs or a brochure that will describe the importance of wetlands for wildlife.

Resource Inventory

- Restored wetlands
- Viewing area and parking
- Habitat for ducks, geese and other waterfowl
- Potential for boardwalk, blinds, scopes and viewing platform
- View of upland and edge habitat

Topics

- Conversion of saltwater marsh to freshwater system
- Conservation of ducks, geese and migratory birds
- Photographing of birds
- Importance of insects
- Raptors
- Great blue herons
- Reasons for elk use of wetlands
- Brooding behaviors
- Wildlife viewing techniques and ethics
- Hiding cover and nesting
- Waterfowls' food source/diet
- Changes of a seasonal wetland
- Interrelationships between wildlife
- Wetland vegetation

Central Theme

Enhanced wetlands at the Dean Creek EVA have created opportunities to observe, understand and appreciate wildlife (particularly migratory birds) and their habitat needs.

Subthemes

- Wetlands are vital habitat for wildlife, especially migratory waterfowl.
- Waterfowl needs include much more than just water. For example, ducks and geese require tall grass or reeds for nesting cover and forage.
- Nesting waterfowl are easily disturbed and may abandon their nest. Visitors should be considerate of wildlife needs.

*Interpretive
Applications*

**Zone 3 - Hinsdale
Interpretive Center**

**Visitor-Intended
Outcomes**

The west end viewing area will have a different focus and feel than the other viewing areas. Its purpose is to provide visitors with an opportunity to view waterfowl and other wetland wildlife in a reclaimed marsh and pond setting. The experience should focus on close-up wildlife viewing and allow visitors to get away from their cars to enjoy the sounds and sights of wetland wildlife.



- ◆ Visitors will view elk moving through, feeding or bedding down in the open pastures.
- ◆ Visitors will read interpretive panels and learn fascinating facts about the natural history and activities of Roosevelt elk.
- ◆ Visitors will walk around the facilities, use the restrooms, stretch their legs, and learn more about additional opportunities at the Dean Creek EVA and other nearby area attractions.
- ◆ Visitors will be able to contact BLM employees or volunteers who will help answer their questions and provide additional information about activities, wildlife, and management of the area.
- ◆ Visitors will be able to locate elk or understand the reasons that elk may not be seen at that time.

Resource Inventory

- Group staging area
- Trail access
- Access to uplands
- Preferred elk pasture
- Natural sloughs
- Riparian areas

Topics

- Elk use of uplands
- Foraging by geese, swans, killdeer
- Edge environment
- Flood control
- Signs of use by elk, deer, porcupine and bear
- Importance of riparian areas
- How beaver modify wetlands
- Umpqua watershed

Central Themes

The central area of the Dean Creek EVA is an excellent place to see and understand the effects of edges, natural wetlands and upland forest habitat, and also their importance to elk and a diversity of other wildlife.

Elk are at the Dean Creek EVA because lowlands were drained and converted to pastures and meadows where grasses and forbs could grow.

The Dean Creek EVA hosts a variety of wildlife, including Roosevelt elk, that visitors can watch and learn about at accessible viewing areas, trails, and facilities.

The Hinsdale Interpretive Center will continue to be a key site for visitors to the Dean Creek EVA. This is an important place to introduce opportunities for wildlife viewing and themes regarding elk and other inhabitants of the area.

Interpretive Applications

The Hinsdale Interpretive Center will be available for all-weather viewing. There will be an assembly site for live presentations, and a place to situate interpretive panels, interactive exhibits and audio media. An FM loop system or AM radio broadcast, local to the viewing area, could provide information to sight-impaired or hearing-impaired visitors (many hearing aids have small receivers built in for this purpose). Interactive exhibits that could easily be removed for storage or secured after hours may be used onsite to augment existing signs or presentations. Brochures could be attractively displayed or available for distribution at this location.

An orientation display explaining elk movement between areas should be developed for use at key viewing sites. The display's format should be flexible to enable noting changes in the location of the herd or of individual animals. Other wildlife sightings could be added to this display, along with observation dates. This exhibit would serve the dual purpose of orienting visitors to restrooms, drinking fountains, visitor information, trails, and other viewing areas. A side panel could help people locate other area attractions or services.



Zone 6 - East Viewing Area

Visitor-Intended Outcomes

- ◆ Visitors will view elk moving through or feeding at the east-end pastures.
- ◆ Visitors will use scopes along a self-guided trail to explore viewing opportunities.

- ◆ Visitors will be able to access information on locating elk, or know whether elk can be viewed at that time.

Resource Inventory

- Dean Creek watershed
- Dean Creek marsh
- Hinsdale slough
- East pasture
- Uplands
- Ranch buildings
- Small ponds and sloughs
- Dike trail
- Elk trails, wallows and rubbing areas
- Beaver construction

Topics

- Functions of the watershed
- Functions of levees, tide gates and channels in flood control
- Elk movements and behaviors in pastures, uplands and wet areas.
- Seasonal behaviors of elk
- Signs of elk use
- Beaver modifications
- Importance of sloughs and wetlands for elk and other wildlife
- Elk, birds and other foragers
- Visitor orientation to the Dean Creek EVA
- Anatomy of a marsh
- Importance of vegetative cover for wildlife

Central Theme

Elk use all parts of the Dean Creek EVA, including upland forest, sloughs, and pastures as they feed, seek cover, and interact with the herd.

Subthemes

The eastern end of the Dean Creek EVA includes managed pastures that are very attractive to elk.

The Dean Creek EVA occupies part of the Umpqua River floodplain; levees, sloughs and tide gates keep the pastures dry most of the year, allowing grasses to grow and providing forage for elk, deer and some bird species. The diversity of habitats on the area provide for a wide range of wildlife types and orientations.

Interpretive Applications

The east-end viewing area will alleviate visitor use of the highway shoulder to view elk in the east pasture and allow visitors to park and explore parts of the Dean Creek EVA on a well-defined trail to Hinsdale Slough. Visitors will also be able to access a Visitor Contact Area at the site of the existing ranch

buildings. From the parking area, visitors will be able to know where to look for elk using an orientation display similar to the one proposed for the main visitor pavilion to the west. Outdoor interpretive panels (2-4) will present themes on the elk use of uplands, pasture, and wetlands, as well as the importance of these habitats for other wildlife.

On the right-of-way, a trailhead sign will direct visitors to the Hinsdale Slough Trail for a 0.5-mile guided trail through meadows just south of the highway. The trail will be well defined and may include rail fencing or other barriers to encourage visitors to stay on the trail. Wide pull-outs in the trail with benches and possible viewing blinds will allow visitors to stop and photograph elk and other wildlife. Guided walks will be given on the trail as part of the scheduled summer programs. School groups will also use this trail to view elk and other wildlife, signs of wildlife use, or their various habitats.



Zone 7 - East-End Ranch

Visitor-Intended Outcomes

- ◆ Visitors will be able to obtain detailed information regarding opportunities at the Dean Creek EVA, visitor services in the area, and other area attractions.
- ◆ Visitors will be able to learn more about elk and purchase books and educational material on elk, various wildlife topics, and other area attractions.
- ◆ Visitors will be able to interact with a BLM employee or volunteer to ask questions and obtain helpful, informative assistance.

Resource Inventory

- Ranch building
- View of east-end pastures
- Space for indoor visitor services
- Access to trail
- Office space
- Storage
- Elk-holding facility
- Onsite residence

Topics

- Wood ducks
- Dean Creek
- Geese and killdeer feeding
- Elk trapping and herd management

Interpretive Applications

- Ranch history
- Uplands
- Elk behavior including feeding, movements, rutting and bugling
- Elk calving (explain behavior)
- Interactive displays
- Flood control and human-influenced changes

The east-end ranch area will be a focal point for visitors (especially educational groups) seeking additional information, book sales, and support services at the Dean Creek EVA. The east parking and viewing area will allow safe access to the contact center and educational facilities, where parking, a passenger loading and unloading area, drinking fountains, and restrooms will be available. All facilities will be fully accessible.

The Visitor Contact Center will feature changeable and interactive displays, an information desk, book and map sales, and brochures/hand-outs.

In the interim pending its disposition, and in the long term if retained, the ranch house will be used for office/storage space and small group meetings.

Facilities will resemble a ranch environment which is an important aspect of Dean Creek's history. An outdoor interpretive panel could enhance this connection by providing a glimpse into the valley's historical background.

The Dean Creek EVA is part of the Umpqua River watershed which flows past farms and forest, and backs up into marshes and wetlands that are important for wildlife.

Streams like Dean Creek are natural corridors for wildlife, allowing movement of elk and other animals while providing cover and sustenance.

INTERPRETIVE MEDIA DESCRIPTIONS

Interpretive Center

Interpretive media will include displays at the existing Hinsdale Interpretive Center and the proposed Visitor Contact Building at the ranch site. There will be a centralized area for visitors to be greeted upon entering a site or building. The greeting area will be designed to make visitors feel at ease and allow visitors to obtain information through either person-to-person contact or self-service. Visitors should receive all the information they need for a meaningful visit. The information center (which may contain a sales area) may be staffed by a uniformed employee or a volunteer, and possibly be operated through an interagency agreement with several other groups. The center will serve as the hub for guided programs and activities, with maps and brochures available.

Interpretive Signs	Signs will be professionally created and designed of carefully blended text and graphics with their content focusing on the chosen theme. The signs may be mounted in a variety of ways such as look-over panels on a metal, wood or stone base, or be designed as a stand-up panel.
Brochures/Road Guides	Various printed documents will be designed, varying from a single flyer to a multiple-page publication, with interpretive text and graphics that are creative and attractive. The documents will range from trail pamphlets offered in boxes at trailheads, to more elaborately printed booklets offered for a small fee. All materials will be thematically designed to present information on a number of topics. In the future, multi-lingual pamphlets may be available to facilitate foreign visitors; these would be made available at the BLM office, and in community contact stations and sales areas such as Reedsport and the Oregon Dunes NRA. A coastal road guide is proposed to link the cultural and natural significance of features in communities and public lands along the coast in a scenic drive.
Maps	The variety of maps that could be available include topographical and tourism-related maps, and may also include an illustration map of new recreation facilities.
Newsletter	A newsletter may be designed for the Dean Creek EVA to consolidate visitor information related to interpretation and recreation opportunities and schedules, weather and roads, and natural and cultural history.
Audio/Visual Media	The types of audio/visual media include slide presentations, video programs, slide-tape shows given by an interpreter in a live presentation, and self-guided programs prompted by a display button. The presentations may involve only a phone recording; however, a slide carousel, tape or video system will be used whenever possible. These types of media will be helpful in presenting interpretive messages, recreation orientation, or tourism information.
Live Interpretive Programs	In this category is any scheduled program given by BLM personnel including talks, demonstrations, hikes, nature walks, living history programs given in costume, children's programs, or safety and fishing demonstrations. Special programs may involve the use of volunteers.
Educational Sales Outlet	A sales outlet will display items for sale—primarily educational materials related to the coastal area. In general, the books will address some aspect of nature or natural history, and will include field guides, photographic essays, and cultural history accounts. There will be various sized publications available in hard or soft cover, booklet or book style. Special tools for nature study (such as hand lenses) may also be offered for sale. Having educational mate-

	<p>rials available for sale is a way of encouraging visitors to learn more about the natural and cultural history of the Dean Creek EVA, other similar areas, and the general region.</p>
Information/ Bulletin Boards	<p>These boards will be creatively designed to present a combination of relevant information such as trail orientation, safety messages, and a brief interpretive theme. They are designed to replace existing bulletin boards except in campgrounds or places where the traditional bulletin board is more appropriate. These are usually professionally fabricated in a stand-up style to be placed at trailheads or strategic locations. In many cases, the focus of information\bulletin boards is to help visitors understand the need for regulations.</p>
Orientation Display	<p>These displays are designed to provide rapid and easy access to information about visitor services and opportunities for recreation.</p>
Interpretive Trail	<p>This trail will be self-guided utilizing interpretive signs or brochures to communicate thematic messages to visitors.</p>
Personal Contact	<p>Uniformed personnel will be available to interact with visitors at interpretive centers and the site office.</p>
Viewing Blind	<p>Blinds are specially designed wooden structures that partially enclose viewers and enable them to sit inside on benches to view wildlife. Two heights of slats are used to encourage viewing by children.</p>
Environmental Education	<p>Specially designed interpretive programs and materials will allow groups to focus on more specific and in-depth needs for learning and experiencing the natural and cultural environment of Dean Creek EVA. Examples of environmental education programs are school field trips, civic groups, and teacher workshops. There may also be curriculum and handbooks for use by educators and students.</p>
Environmental Study Area	<p>An area will be designated for groups to study and explore learning concepts. This study area may consist of a building, campground, picnic area, or an interpretive trail designed specifically for group use with accompanying curriculum, or maybe an adult seminar to explore land-use issues or investigate wetlands .</p>

Appendix D

Summary of Existing Interpretive Services Between Newport and Bandon, Oregon

The draft Coos Bay Shorelands Interpretive Plan (Andersen et al. 1990; available at the Coos Bay BLM office) profiles existing interpretive services between Newport and Bandon, Oregon. That list is summarized below to give a perspective of the types of formal interpretive facilities, programs, signs, displays, or interpretive trails that are either planned or already exist. Although there are many state and county parks and other facilities along this stretch of the Oregon coast, only those with known interpretive facilities or programs are included in this summary.

Yaquina Head Outstanding Natural Area Newport, Oregon

This is a newly proposed visitor center to be constructed and managed by the Bureau of Land Management. Its purpose will be to interpret the outstanding resources of the Yaquina Head area. Although the lighthouse is closed to public access, the area offers outstanding undisturbed ocean vistas, open coastal headlands for walking and viewing, a high quality marine intertidal area, and an operating lighthouse. Management will focus on intertidal resources, wildlife viewing opportunities, brief interpretation of prehistoric uses, and the outside views of the lighthouse. Tidal pools are being reconstructed to create barrier-free access. The Center may have an admission fee.

Hatfield Marine Science Center (HMSC) Newport, Oregon

Operated as an extension of Oregon State University, the HMSC is a 200-acre facility featuring an aquarium and short nature trail. The Center is dedicated to educating the public about Oregon coastal resources. Its 180-seat auditorium and 70-seat meeting room are available for use by community groups after regular operating hours. Visitation for 1989 totaled 421,546 visitors, of which 51 percent were first-time visitors, 33 percent had visited twice in the last year, and 22 percent were families with children. Statistics also showed that 14,040 visitors attended education programs; 19,990 were whale watching; 7,140 were bird watchers; and 52,500 watched films shown daily at the Center. Income generated from the museum store during 1989 was \$124,306 which represented 30 percent of operating expenses for that year. No admission fee is charged.

Attendance at scheduled activities generally reaches two-thirds to maximum capacity. Special summer programs include nature walks, talks by marine scientists, teacher education, and sixteen (2-3 day) workshops. Winter programs include whale watching weeks and daily films; in some of its programs, HMSC also uses Yaquina Head tidepools. The staff consists of 3 permanent

full-time people, 2 teaching assistants, 10 part-time students, 85 part-time volunteers, and several university faculty.

Cape Perpetua Visitor Center **South of Yachats**

There is easy access to this visitor center off Highway 101. The 3,700-square-foot facility, operated by the Forest Service, was recently remodeled. It has a broad scope of displays presenting information about the natural and cultural history of the headland. The Center also provides access to tidelands, 22 miles of hiking trails, and a scenic overlook. Several naturalists give guided programs at the Center and along the ocean shore, and a small theater features a movie on Cape Perpetua. There is also a sales area. Outside signing provides information about the area's prehistory, a shell midden discovery on the Cape, and vegetative communities. A short trail accesses a viewpoint with interpretive signs. Orientation signs are well-designed. A forestry auto tour and a hiking trail lead visitors to a mountain viewpoint overlooking the cape.

Yearly visitation at the Center is generally around 100,000. Because the Center was closed for remodeling in 1989, however, that year's visitation was only 89,250, which included 1,244 elementary students from 36 schools. School visitation occurs primarily during the March whale-watching season. The Center has one full-time director, five full-time naturalists, one part-time maintenance worker, and some volunteer staff.

Devil's Elbow State Park **13 miles north of Florence**

This park provides access to Heceta Head and a lighthouse that is operating but not open to the public. Reportedly, this area is one of the most photographed scenic spots on the coast. Its amenities include a small cove beach, a system of hiking trails, picnic facilities, restrooms and fishing sites. New, excellent signing relating to the site's history is located at the beach parking area, but there is no interpretive center. Day use during 1989 was 341,322.

Darlingtonia Wayside Trail **North of Florence**

This is a short interpretive trail in a forested setting adjacent to a picnic area. A boardwalk trail provides access to a community of pitcher plants, and a large wood-routed sign provides some interpretation.

Oregon Dunes NRA Visitor Information Center Reedsport, Oregon

The U.S. Forest Service operates this Center, which is located in Reedsport — at the mid-way point of the Dunes' 47-mile long recreation area. The purpose of the natural recreation area (NRA) center is to educate the public about the Dunes environment and to provide information about recreation orientation and opportunities of the NRA. It has 1,274 square feet of space divided between a small information area containing minimal interpretive displays and a theater which shows a movie on the Dunes. Outside displays have a dune formation theme used consistently on all recreation orientation signing in the Dunes. The average length of stay at the Center is 15 minutes. In 1989, visitation numbered 21,786. Visitation is seasonal with 70 percent of visits occurring between June and September.

Roving contact is provided by one seasonal interpreter and a volunteer staff. However, no interpretive contacts have been given at the Horsefall area on the NRA's southern end due to distance, and minimal staff and funding. A mobile van is used to offer video tapes on safety and natural and cultural history to ATV users, and campfire programs are given on weekend evenings during the summer season. Standard recreation orientation signs in the Dunes NRA do not provide simple and quick orientation for visitors.

Oregon Dunes NRA Overlook, West of Highway 101 between Florence and Reedsport

This overlook has a covered boardwalk viewing platform offering barrier-free access to view the Dunes. There are a few small illustrated interpretive signs about the area's wildlife and forest topics. Data compiled for the summer of 1990 showed total visitation at the overlook was 337,000; a volunteer Visitor Host made contact with 40,000 people in three months of the summer season.

Butterfield Lake, North Bend, Oregon

This 226-acre site, often called the Riley Ranch, is located about seven miles north of Coos Bay in the Dunes NRA. In the past, it was used extensively by church and civic groups and is still used on a special use permit. Historically, this site was a small ranch, but now only a house, a few farm buildings, and 16 cranberry bogs remain. A recent feasibility study was done to consider possible uses of the site, including a field institute/conference or outdoor school center.

Lagoon Lake Nature Trail, South of Westlake

One of 12 developed trails in the NRA, this trail is scheduled to be redesigned as a new interpretive trail.

**Lower Umpqua Interpretive Center/The Hero Foundation
Reedsport, Oregon**

This is a proposed community interpretive center involving 13 groups in partnership with the USFS. Half of the Center's space is being funded by the Hero Foundation for displays concerning oceanic research of their Hero Research Vessel in Antarctica. Guided tours are given on the ship which is docked in Reedsport. The Center's interpretive theme is related to the land, water and people on the Umpqua River. A 50-seat theater is planned as part of the interpretive effort.

**Honeyman State Park
North of Winchester Bay**

This state park offers naturalist-led campfire programs on weekends and children's programs during the summer season.

**Umpqua Lighthouse State Park
Winchester Bay, Oregon**

Although this Coast Guard lighthouse is operational, there is minimal dated interpretive signing outside the lighthouse. A volunteer group called the Umpqua River Skyhoppers, along with Douglas County Parks and numerous other groups, recently developed a boardwalk viewing platform with porcelain enamel signs on whale observations and identification and natural history. This area attracts heavy visitation during whale watching season. Douglas County Historical Society has restored a 1932 Coast Guard life-saving station similar to the one in Charleston. This restored station is open to the public and has some outside signing as well as a restored surf boat.

**South Slough National Estuary Research Reserve
Four miles south of Charleston, Oregon**

This small interpretive center and reserve is funded and managed through a partnership between the state of Oregon and the National Oceanic and Atmospheric Administration. It serves as the major contact point for visitors to the South Slough Reserve, a 3,700-acre forest/600-acre tideland sanctuary. The Center's primary mission is conservation, education, research, and low-impact

recreation. There are numerous small displays that focus on the diversity of the estuary environment as being "the richest place on earth." People are also interpreted relative to their dependence on the estuary. There is a small sales area offering educational books and materials.

Environmental education curriculum has been developed at the elementary and secondary levels for classroom and field use.

Visitation at the South Slough Center in 1989 and 1990 averaged about 12,000 visitors per year. School groups accounted for an additional 4,000 visitors. Some specifically popular activities were trail hiking and canoe trips, with some 5,000 hikers using the trail each year. Summer seminars are offered for a small fee and cover a wide diversity of classes from photography to wildflowers and marine ecology. There are five full-time employees at the Center, and also an active volunteer group.

North Bend Chamber of Commerce North Bend, Oregon

A small building offers tourism information to visitors traveling by on Highway 101. The Oregon Dunes NRA, Coos County Parks, and South Slough Reserve have orientation signs located together in an outside kiosk giving information on how to get to each facility and what to find there.

Highway 101 Overlook North Bend, Oregon

This overlook sits west of Highway 101, north of the North Spit turnoff. Two new signs mounted on wooden posts provide information and orientation to area recreation opportunities available through the Coos County Parks and Recreation Department and the Oregon Dunes NRA.

Oregon Institute of Marine Biology Charleston, Oregon

This facility is an historic Coast Guard lifesaving station that was built in 1918 and now is operated by the University of Oregon as a campus offering classes and seminars in marine biology and ecology. It has classrooms, labs, and dorm type housing. Recently remodeled and renovated, the site has a series of small outside tanks of tidepool creatures that are open to visitors and provide brief interpretive messages.

**Coos County Historical Society
North Bend, Oregon**

The society operates a small cultural museum in North Bend, including displays and a small sales area, next door to the Chamber of Commerce. Its displays are changed periodically to feature different significant aspects of the cultural history of Coos County. The site is staffed with a curator and volunteers, and a nominal entrance fee is charged.

**Shore Acres State Park
4.5 miles west of Charleston**

This 743-acre state park is the former estate of the Louis J. Simpson timber family. One key attraction is a restored formal garden featuring a Japanese garden and lily pond. Another key attraction is a glass-enclosed observation shelter which offers protected viewing of ocean vistas and outstanding geologic formations. Marine mammals are commonly seen from the park, which is particularly popular during whale-watching season. Interpretive panels provide information on the shipping and timber history of the Simpson family and the estate. During the summer season, a video is shown to explain the area's cultural history. An entrance fee is charged during the summer season weekends and holidays. An active volunteer group, "Friends of Shore Acres," is working to support the future interpretive and educational activities of the park.

**Bandon Lighthouse
Bandon, Oregon**

This lighthouse is open to the public. Inset into the interior lighthouse walls are interpretive panels, including a few drawings, on the cultural history of the lighthouse and the shipping history.

**Confederated Tribal Council
Coos Bay, Oregon**

The tribal council is securing funds to build a museum in Coos Bay (Empire area) with focus on interpreting the history of the area's tribal groups. The museum plans include displays and interpretive programs.

**Bandon Museum
Bandon Historical Society
Bandon, Oregon**

The museum is located on the second floor of an historic building overlooking the waterfront in downtown Bandon. Its displays relate to the area's prehistory, and also feature peoples of the Coquille River.

**Coquille Estuary/Oregon Islands National Wildlife Refuge
Bandon, Oregon**

The U.S. Fish and Wildlife Service is acquiring land in Bandon known as Coquille Point, and plans to have a short interpretive trail with signs. Topics of focus include seabirds, marine mammals, and the importance of the river estuary. A small viewing deck is proposed to introduce the wildlife on the rock jetty, and a kiosk is planned at the jetty to show water management exhibits. The USFWS also plans to interpret the area's prehistory at the Bandon Museum and Bullard Beach State Park.

Bandon Marsh Wildlife Refuge plans include a proposed viewing boardwalk with an overview of the salt marsh, and interpretation of the landscape disturbance and ecology of the forest and fresh water habitats.

Other Elk Viewing Areas in the Pacific Northwest Region

Jewell Meadows
Jewell, Oregon

Jewell Meadows, a 1,200-acre area located in northwestern Oregon, is managed by the Oregon Department of Fish and Wildlife. No hunting is allowed in the meadows. The management objective of the area is to provide food for wintering elk and other wildlife, and a place for the public to view and study wildlife in a natural setting. During the winter, when elk are fed alfalfa hay, between 75 to 200 elk can be seen almost every day in the meadows. The area supports a great variety of other mammals, birds, fish, reptiles, and amphibians. Site management includes haying of the pastures, and tilling and seeding of some meadows every 7-10 years.

Cedar River Watershed
Bellevue, Washington

This northwest Washington site provides quality habitat and intact watershed through the management of sensitive habitats and habitat restoration. The site emphasizes educational, research and naturalist activities. Features on the site include a kiosk-style information area which provides cultural and natural history of the watershed; a log cabin; an office; a native plant display; and a 700-year-old tree round ("cookie") with historic references. Plans are to construct a 9,000-square-foot facility with two classrooms, a wet/dry laboratory, and an archival area. About 6,500 people visit the area each year through scheduled programs; most of the visitors (2,500 to 3,000) are students and people from special interest groups such as historical societies.

A stable herd of 700 free-roaming elk divide into numerous small groupings. This site provides total protection for the elk with no hunting allowed. None of the habitat is managed except for the native plant garden and landscape at the office. Elk use small wet meadows and other natural clearings. There are wildlife viewing opportunities for songbirds, migratory birds, mammals, amphibians and reptile species common in the late seral and old-growth Douglas fir/Hemlock community.

Prairie Creek Redwoods State Park
Crescent City, California

This 14,000-acre state park features old-growth coastal redwoods. The park has two developed campgrounds and nearly 75 miles of hiking trails winding through the area. A prairie area emphasizes viewing opportunities for Roosevelt elk, and a parking lane on Highway 101 allows vehicles to pull off the road to view the elk. Burning of the meadows is the only management practice for elk forage.

029253

ER'S CARD

1993

Viewing Area
agement plan

OFFICE	DATE RETURNED

(Continued on reverse)

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

